University News

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Ramlal Parikh

Agriculture for Rural Development

K.K. Ramachandran

Management Information System
— A Study in a University

Meenakshi

My Readings : Casual and Serious

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Our Higher Education System
— Convocation Address

GIS Application Centre

Symposium on Area Studies

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Abbreviations: ST : Scheduled Tribe, G: General, SC: Scheduled Caste, OBC : Other Backward Caste, Spl.. Specialisation

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Editor :
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Agriculture for Rural Development

Ramlal Parikh*

In the post-independence India, agricultural productivity in terms of quantity of foodgrains in cultivated areas has been continuously increasing. There has been a spectacular breakthrough in the production of paddy and wheat after the seventies as the production of these crops increased with an annual compound growth rate of 2.89 and 4.55 per cent respectively. Consequent to this, institutions like Food Corporation of India and Agricultural Price Commission were set up for the management of food economy and to safeguard the interests of both farmers and the consumers.

2. Agriculture is not a mere technological phenomenon. In India, it is a way of life. It was so in past. It continues to be so today and it will continue to be so in future. Agriculture will remain a central core of development. Agriculture is not only cultivation, it is a social and cultural phenomenon which provides a bedrock to the entire process of socio-economic development. Agriculture produces resources which generate many productive cycles with multiplier effects extending to all facets of life in the rural society. From this viewpoint, agricultural research should not be confined to technocratic research. It should give greater attention to its contribution to rural development. To realise such multiplier effect of agriculture, it should become the mainstream of the rural development. Agriculture should not be treated as a separate component of development. It should become an effective instrument for the development of the entire rural society through meaningful linkages between agriculture and village industries. Agricultural extension programme therefore needs to be a programme of agro-industrial extension. Separation of agricultural research from industrial activities of rural society in non-agricultural sector has not helped the quicker transformation of the rural society. Agriculture and rural technology should be made inseparable.

3. Although the production of wheat doubled in seventies, production of rice did not achieve sufficient breakthrough. Other major foodgrains like jowar and bajri did not register visible impact mainly because these are produced in non-irrigated, erratic rainfall areas. In eighties crops such as rice and pulses whose growth rate had earlier fallen below showed higher growth rate. But as all our efforts to accelerate agricultural production have been directed mostly towards irrigated land and foodgrains, the realisation of goal of 'Food for All' still eludes. Self-sufficiency in foodgrain production requires the agricultural development of dry land areas constituting nearly 72 per cent of India's cropping land. This has been so far neglected. It is thus obvious that the key to long-term strategy for coping with recurring droughts lies in concentrating research and development efforts on dry land area, managing it with scarce water resources. Agriculture for rural development needs to attend to inputs management and

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**Vice-Chancellor, Gujarat Vidyapith, Ahmedabad-380 014.*

development of post harvest technics to prevent wastages which are as high as 30 per cent. Marketing and development of extensive credit facilities will play a much greater role in this process. The very purpose of development is to open all choices for agriculturists. That would be possible only if post harvest technologies are well developed. Ecology and energy are two other very important dimensions.

We should also remember that although 30 per cent of the country's cultivated area is under irrigation, a large proportion of this is dependent on tanks and wells which are themselves dependent on rainfall.

4. While the growth rate of foodgrain production (3.2 per cent) has so far exceeded the growth rate of population, it has been unable to meet the demand for food because of the increase in per capita consumption. It is further estimated that the demand for foodgrains is likely to grow at a rate of 3.5 to 4 per cent. With a population base of 930 million and the projected demand for food, the problem of food supply now begins to assume even larger dimensions. Despite elaborate schemes, our foothold on the ladder to food security remains a tenuous one. Land degradation due to deforestation, erosion and water-logging are the gravest problems of Indian agriculture. Land degradation of all forms, principally soil erosion, affects 174 million hectares of country's 329 million hectares of territory. Watershed development programmes have now been undertaken in many areas which promise to rèverse this degradation. Yet, lands taken up so far for the conservation measures are a small fraction of the total land that needs treatment Thus only 31 million hectares of 174 million hectares were reported to as treated till 1986-87.

5 Traditional agriculture, prior to the advent of high yielding varieties, was based on self-sufficiency of the farmer with regard to major inputs to the production system of agriculture. Seeds, fertilizers and implements were locally produced. With the advent of modern agricultural practices, the farmer has been deeply tied to the industrial system. In the rice and wheat belts, especially, farmers are dependent on industrially produced chemicals like fertilizers, pesticides and seeds. Because of the restricted impact of the high yielding varieties on dryland zones, the rural production system of drylands is not fully a part of structures which dominate the rural communities of the wetland cultivators, The problem of drylands needs to be tackled in terms of the following aspects:-

1) A majority of the agriculturists live in dryland belts and unless their problem of low productivity is resolved, the agricultural development will not accelerate.
2) The basic problem of the dryland agriculture is uncertain rainfall. Therefore, water management and its appropriate use is the crucial factor in increasing productivity.
3) High yielding varieties for dryland cereals, oilseeds and pulses must be developed and should accompany appropriate packages of agronomic practices.
4) Physiological characteristics of drought resistance must be identified and introduced in genotypes which also display high-yielding characteristics.

6. Agriculture has very close linkages with rural energy system in India, where non-conventional energy sources form an important component of the rural energy system. Since energy is an important resource for agriculture and at the same time agriculture is a resource for energy, relationship of agriculture with rural energy is mutual. For example, dung can be used as fuel or as fertilisers; crop residues can be used as fuel or fertilisers; or as feed for animals, land can be used to grow food or fodder and so on. The importance of these options to meet the food and fuel needs may differ from region to region. The issues that may be important may also be different across regions, for example, it may be a question of biomass allocation for food, fodder, fuel, fertilizer, etc. Organic farming without chemical fertilizers is an experiment worth emulating on large-scale.

Interrelationship of energy from agriculture and energy use by rural households calls for supply-demand consistency for bio-mass not only for fuel purpose but also for uses such as fodder, fertilizer, etc. This is specially important in situations where, (a) livestock population is large, (b) cropped land is substantial and fertilizer demand is significant, and (c) purchase price of substitutes such as kerosene, bought feed or inorganic fertilizers are high or their availabilities are low.

7. Soil erosion is a natural and continuous process, but in undisturbed eco-systems with a protective cover of plants the soil is usually regenerated. If soil

and vegetation are not in balance, as often they are not, when influenced by poorly managed human activities, erosion is accelerated with disastrous consequences. Soil loss has accelerated sharply in India. More than half of India suffers from some form of soil degradation : out of her total of 3.3 million square km., 1.4 million sq.km are subject to increased soil loss, while an additional 2,70,000 sq. km. are degraded by floods, salinity and alkalinity. An estimated 6000 million tonnes of soil are lost every year from 8,00,000 sq.km. alone; with them go 6 million tonnes of nutrients — more than the amount that is applied in the forms of fertilizers. It is estimated that close to one third of the world's arable land will be destroyed in the next 20 years if current rates of land degradation continue. This is a critical moment when we are called upon to make difficult choices between Soil and Food.

8. It is increasingly realized that improving the quality of life of the rural masses, and removal of poverty should receive priority in developmental process Rural development should be a self-sustaining process. Self-sustenance is a participatory process which is distinct from simply reaching the subsistence population. Human development — 1995 emphasizes three essentials for this ·

(1) to provide long and healthy life,
(2) to provide knowledge, and
(3) to provide access to the resources needed for a decent standard of living

This report emphasizes that human development brings together the production and distribution of commodities and the expansion and use of human capabilities

Those at the 'receiving end' have the potential energies and the primary focus in planning for rural development should be to release the energies of the rural masses. Their efficiency as producers has to be raised through education, extension work, demonstration projects and by providing access to inputs and public services. The Krishi Vigyan Kendras scope should be widened by imparting skilled competence, in agriculture, water resources, livestock, biogas and low-cost post-harvesting structures. Productivity, equity, sustainability and empowerment are the four facets on which agriculture for rural development should rest.

9. Rural development does not mean a mere non-urban process. The word 'rural' is not spatial alone but is to be viewed in social and cultural context. Rural society has its own social and cultural ethos. It requires a different type of approach — a kind of community approach. Rural development is not a negative concept but it is a positive concept of strengthening the rural society on the foundations of self-reliance in basic human needs and securing for them a social order which will protect them from exploitation from within the rural society as well as from outside the rural society. Thus, rural development is not a counterpart of urban development. Conceptually it is not only different from urban development but in many respects even contrary to its ethos. The very nature of Indian rural society divided into more than 5,75,000 villages with nearly 4,50,000 villages having a population of less than 1,000 souls, requires an indigenous strategy of development. There are hardly 5,000 villages with the optimal size of 10,000 people. The word 'rural' means totality of approach and not aspectual approach. This lends a new meaning to the entire development process, which despite loud claims is fragmented, aspectual and unintegrated. The rural society has a culture of its own which is not necessarily backward as is often made out. Rural development needs to take place in the framework of rural culture and not merely rural location It, therefore, requires approach that is in tune with rural society, as an indigenous socio-cultural entity. The rural society in India has a predominant place, as even after four decades of planning, it still constitutes over 76% of our population, 90% of rural population depending on agriculture and among it 75% depends on rain-fed agriculture. In terms of agricultural holdings 51% of the holdings still constitute less than 1 hectare size and 90% holdings are less than 2 hectares size. In terms of gainful work 30% are landless agricultural labourers and 51% are cultivators, many of whom do not have land of their own. It is not a question of mere transfer of technology or extending merely urban facilities to villages but it is a question of reconstructing rural society on certain foundations which will reinforce their capacity to withstand the onslaught of urbanisation which flourishes on exploitation of villages. Mahatma Gandhi had warned as back as 1929 when he stated "To serve our villages is to establish Swaraj, everything else is but an idle dream". He further stated in 1936 that "If the villages perish, India will perish too. It will be no more India. Her own mission in the world will get lost. Instead of village subserving cities, cities must subserve villages". In 1942, he further elaborated this idea by stating that "My idea of village Swaraj is that it is a complete republic and independent of its neighbours for its own vital wants and yet inter-dependent for many

others in which dependence is a necessity". The word 'rural' therefore is not a mere spatial qualification or adjective to the word 'development' but is the very foundation of an alternative strategy of development.

10. Development is not necessarily identical with progress much less with equity. It is a disturbing discovery that development promotes disparity and in consequence far from removing poverty, enhances it. This is not a plea for abolishing developmental process as such, but it is a plea for radical change in the approach to development from mere growth to distribution and from vertical mobility to horizontal and concentric relationship advocated by Mahatma Gandhi. Modern nations are full of disparities among themselves as well as within themselves. The disparities are assuming great proportions and are denying fruits of development to under-privileged sections of the society, particularly in Third World or Southern World though the Northern World also is not free from it. Enough data is coming forth to establish that even developed countries have also substantial third-world within it. The development process should be decentralised and should move upward from bottom rather than flow down from the top. It has been unquestionably established that the downward transmission of development process does not take place effectively. Development in this sense will not merely depend on physical infrastructure but will depend more on human resources which are abundant in all parts of the world and in all parts of the country. The horizontal distribution rather than vertical growth alone is imperative. It will have to reckon with impact of environment on the life of people and vice-versa. Development must be a micro-process which may culminate into a macro-profile. The illusory nature of development is borne out by the non-distributive character of its process. Growth with social justice has largely remained a myth. The new thrust will have to be on 'development without disparities' or social justice for growth.

11. While agriculture and rural development are increasingly recognised as important segments in our planning, it is not yet the foundation of our planning. What we — Social Scientists — need to work, for, is to establish the inescapability of the foundational nature of holistic rural uplift in our process of development. This may be possible by making agriculture an instrument of uplift of the entire rural society with all its segments. It needs a socio-cultural approach rather than a mere technocratic approach. Peripheral and fragmented programmes of rural development are highly inadequate. Despite several thousands of crores of rupees spent in rural areas, it is not fostering the process of societal change that is so necessary for achieving distributive development process. This is not a measure of increasing allocations in a segmentive way for different rural services. For example, on the question of increasing the input of energy for the spread of technology, it is necessary to find out whether greater input beyond a "threshold point" will far from promoting equitable development will not create more disparities. According to Mr. Evan Illich,the author of famous book *Energy & Equity*, USA spends 45% of the quantity of its energy on vehicles alone. It is estimated that an average American spends 1600 hundred hours in his or her car. Americans use more fuel for its 250 million people than for 200 crores people of India and China together. If natural resources are used in such an extravagant manner in India too, how can one dream of an egalitarian society? Use of energy beyond a threshold point accelerates disparities and benefits only a smaller percentage of population. This one illustration should establish the crux of the problem that energy crisis can be met not by increase in quantity of energy but restrain in its consumption, particularly by developed sectors of the society. The programme of energy development should, therefore, be a programme of restrain in use of energy. Once the use of energy beyond a threshold point is restrained, there will not be Energy Crisis and an equitable development process will emerge.

Rural development, thus, is an alternative strategy to the prevalent development model which continues to foster new disparities rather than reducing them. In this alternative strategy, agriculture will not be an end in itself but will be a paddling source of development process. This is a daylight revelation.

12. The Integrated Rural Development Programme (IRDP) has a very thin impact on the rural poor. The Project Evaluation Organisation of the Planning Commission itself and the National Bank for Agricultural and Rural Development in their evaluation of IRDP, pointed weaknesses in identification of the beneficiaries, lack of development of adjuncts, drawback in administrative and organisational structure and lack of necessary monitoring and follow-up action as contributing to the limited impact of the project. Because of these, the poverty and deprivation continues unabated. The involvement and participation of the people are not its core. The potentiality of landless labour is not harnessed.

Schemes like Shram-dan Bank have not found a principal place in IRDP. This programme therefore operates in a most fragmented and segmentive manner without substantive participatory process.

However, there have been successful performance of micro-level rural development projects in many areas over the years. But the successes of the specificities are not reflected in the micro-level planning. What is needed is the aggregation of the micro experience and local level specifications. This calls for a radical change in the planning process and planning apparatus.

The theory of 'trickle down' which was aimed at in the initial process has not materialised. But (1) Recycling of agrowaste fertilizers, (2) Green House nurseries for seeds, and (3) Water transport did increase the farm productivity, but poverty alleviation is very far from realisation. Most of the existing programmes do not touch even the fringe of the problem of poverty alleviation. Many projects have failed because of the lack of comprehension of local circumstances, local institutional structures and socio-cultural patterns. Wherever these have been taken into account, the beneficiaries have shown wide enthusiasm and adaptive capacity. The rural development projects therefore need to be integrated with local resource endowment, local institutional set up, harnessing of local services and facilities through an integrated area approach and communication approach. The target group approach is far too fragmentive. The people of a village or a cluster of villages should be viewed as an integrated community despite apparent socio-economic divisions among them.

13. World Commission on Environment and Development emphasized the concept of sustainable development. In the document titled *Our Common Future*, the concept of sustainable development was outlined. Sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all. The Brundtland Report defines sustainable development as development that meets the needs of present generation without compromising the ability of future generations to meet their own ends. This concept requires simultaneous reconciliation of conservation with the development. Gandhiji's precept that there is enough for everybody's needs but not enough for anybody's greed implied the concept of sustainable development. The relevance of Gandhian views gets enhanced with the global think tanks thinking similarly. Gandhiji's paradigm of rural uplift was a paradigm of meeting basic human needs in a manner that self-sufficient village-republics could emerge. The Gandhian experiments of local development in the villages do provide sufficient keys for the emergence of grassroot alternatives of rural development. The British Economist, Schumacher, in his legendary *Small is Beautiful* argued that what we really required from the scientists and technologists was methods and equipments which were :

- cheap enough so that they were accessible to virtually everyone,
- Suitable for small scale application, and
- Compatible with man's need for creativity.

14. A technocratic approach is insufficient and a system approach is needed to establish new objectives and to arrive at new solutions. We should view rural development more as a programme of elevating village people through multi-sectoral activities beyond agricultural development alone. The poor should have easier access to universal literacy and basic education, credit and other inputs and services. Without universal mass literacy, it would hardly be possible to make agriculture an effective instrument of social transformation of the rural society. The exploding population in rural society can be contained only through mass literacy. The primary objective of rural development should be the enrichment of the material resources and social uplift of the rural population with particular reference to landless and agricultural labourers, artisans, small traders and other weaker sections in rural areas. The rural development should be recognised as a transition from technocratic strategy of development to a human strategy of development. Thus, in a more fundamental sense, it should reflect a unified approach aiming at enabling the rural poor to initiate and command the entire process of social economic, political and the cultural development of their life. The role of farm women needs to be particularly increased. Even in the context of technocratic approach, it should be underlined that women command most of the process of post-harvest technology. The technical innovations in this sphere are urgently called for in order to upgrade the prevalent low skill technology of farming, harvesting, storing and food-processing. The most significant aspect is to make the masses feel that they have an initiating role to play in the building up of a better society for the future and they are a significant source of strength to do so. As Gandhian perceptions would call it every villager should be enabled to build a true village Republic.

Management Information System
A Study in a University

K.K. Ramachandran*

Introduction

Information handling takes place in every organisation. But a systematic collection of the right data, its proper recording and timely retrieval for decision making are all parts of a well designed Management Information System, the need of which has become imperative in recent years. The major reason for most of the weaknesses in the existing information set up of many of the organisations is lack of a system approach. To provide each level of authority with appropriate information in the right form and at the right time, a system approach is inevitable. Such a system will help to collect, discriminate, select, relate, classify and interpret the information according to the needs of the user.

If information set up is based on the information needs of the user and is scientifically developed, so that all inter-related aspects of handling such as analysis, storage, retrieval, flow and use are adequately covered, then it fulfils the requirements of a Management Information System. It is meant to meet the management's requirements for information with a systems approach focusing attention on the above mentioned aspects and impelling the executives to look for reliable information which could enable them to take and improve the managerial decisions. In addition the system would convert the mass of data available in the organisation into meaningful and required information. Thus information has two roles to perform in an organisation: first, to tell the executives when to take action; and second, to provide factual basis for taking such action.

There is a general feeling that in universities, in the public undertakings and in the government departments the executives are handicapped because of the non-availability of required information which they need for decision making. The reason for this is that the data generated and stored in these undertakings is not exactly determined on the basis of correct information requirements at each user level. As a result it seems there is good amount of data which is unnecessary and at the same time there are likely to be gaps which directly affect the work of the user level. There is also considerable time lag in obtaining the required information with the result that by the time it reaches the user, it is no more than historical information. This hinders scientific decision making by the user. Such being the situation, it is felt that a study of the existing information set up of one the prominent universities in Kerala would highlight the need for a system approach in storage and retrieval of information. The objective of the study is to examine the existing information set up in one of the prominent universities in Kerala.

This study seeks to measure the attitudes of the staff towards the efficiency and/or inefficiency of the existing information set up in the university.

Methodology

Sampling Plan

The sample comprises staff drawn from three hierarchial levels: Viz. Assistant Registrar/Deputy Registrar, Section Officers; and Assistants. The number of respondents in each category is 6, 11 and 14 respectively.

Data Collection and Analysis

Data for the study have been collected from the sample using a structured questionnaire. The attitude of the staff towards the existing information set up have been measured along 10 variables which are considered to be the essentials of an effective information system. The variables used for the study are whether the information supplied is

(1) Need-based

(2) Accurate

(3) Concise

(4) Reliable

(5) Relevant

(6) Consistent

(7) Economical

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(8) Flexible

(9) Exception oriented; and

(10) Having predictive ability

A combination of two statements (one positive and other negative) has been developed for each variable and the respondents have been asked to indicate the extent of agreement to each of the statements on a 5 point scale. The attitude of the staff towards each variable has been measured by comparing the mean scores with the standard score of 6 (i.e. 2x3 ; 2 being the number of statements relating to each variable and 3 being the median score on the 5-point scale). If the observed mean score is greater than the standard score, it indicates a favourable attitude, if it is less than the standard, an unfavourable attitude, and if it is equal to the standard, a neutral attitude is assumed.

Results

The results are presented and discussed below:

1. ***Need Based***

By Need-based, it is meant that the information available should directly relate to the key variables in a problem situation and it should offer implicit directions for decision making. The decision making process has become highly scientific and there is no place for guess work. The attitude of the respondents towards the provision of need based information is presented in Table 1.

Table 1 - Opinions as to whether the Existing Information Set Up is Need-Based

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	36	6
Section Officers	6	61	5.55
Assistants	6	73	5.21

It is observed from the table that Section Officers and Assistants feel that the information provided is not need based as the mean scores for both the categories are less than the standard score of 6. Respondents in the first category, however, are found to have a neutral attitude with the mean score coinciding with standard score.

2. ***Accuracy***

An officer in the organisation has to constantly size up the situation to find out what the problem is. He has to draw up a plan by defining the objective and visualising the job that needs to be done. He has then to set up an administrative organisation with a view to obtaining the desired results. Availability of accurate information assists him in all these areas. The attitude of the staff towards accuracy of information provided is depicted in Table 2.

Table 2 - Opinions as to whether the Existing Information Set Up facilitates Accuracy

Category Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrar	6	38	6.33
Section Officers	6	59	5.36
Assistants	6	70	5

It is observed from the table that SOs and Assistants are of the view that the information provided is not accurate as the mean scores for both the categories are less than the standard score, while ARs/ DRs are of the opinion that accurate information is provided to them.

3. ***Conciseness***

Conciseness or availability for only required information is necessary to avoid waste of time by seeking clarifications and processing the raw information. Table 3 shows the attitude of respondents towards conciseness of information provided.

Table 3 - Opinions as to whether the Existing Information set up maintains Conciseness

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	44	7.33
Section Officers	6	63	5.73
Assistants	6	80	5.71

As regards this variable, respondents in the first category feel that the information provided is concise as the mean score obtained is greater than the standard fixed. In stark contrast to this, staff in the other two categories are of the view that the information provided is not concise.

4. *Reliability*

Reliability is cited to be one of the major characteristics of the information required for decision making. Otherwise, there is every chance of misleading conclusions and wrong policy making. The attitude of the staff towards reliability of the information supplied is presented in Table 4.

Table 4 - Opinions as to whether the Existing Information Set Up inspires Reliability

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	49	8.17
Section Officers	6	64	5.82
Assistants	6	76	5.43

From the Table it is observed that ARs/DRs are of the opinion that reliable information is provided to them, as their mean scores is above the standard score. The other two categories score below the standard score and this suggests an unfavourable attitude. This means SOs and Assistants feel the information provided to them is not reliable.

5. *Relevance*

To draw out rational conclusions from the available information is of utmost importance. It would be wrong to interpolate subjective factors to infer conclusions that would be acceptable to the organisation. In this regard, emphasis will have to be laid on logical conclusions which must be built up as an essential corollary to the relevant information. The scores obtained from the three categories of respondents regarding relevance of the information provided are furnished in Table 5.

Table 5 - Opinions as to whether the Existing Information Set Up facilitates Relevance

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	32	5.33
Section Officers	6	66	6
Assistants	6	90	6.43

A comparison between the mean scores and the standard score reveal that the assistants have a favourable attitude while ARs/DRs have an unfavourable attitude. Section Officers are found to be indifferent as their mean score coincide with the standard score.

6. *Consistency*

Like a stone which causes ripple resulting in a series of ripples, inconsistent information leads to further consistence. Every Officer in an organisation is interested in a continuous flow of information concerning his needs. This helps the management also to establish and maintain channels of communication.

Table 6 - Opinions as to whether the Existing Information Set Up maintains Consistency

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	33	5.5
Section Officers	6	58	5.27
Assistants	6	69	4.93

A comparison between the scores show that the mean scores are less than the standard score for all the categories. This means that the staff across all categories are of the view that information supplied lacks consistency.

7. *Economy*

An information set-up should be economical in the sense that it must facilitate the desired information with minimum cost investment. The scores obtained by the three categories of staff regarding economy are presented in Table 7.

Table 7 - Opinions as to whether the Existing Information Set Up is Economical

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars, Deputy Registrars	6	36	6
Section Officers	6	58	5.27
Assistants	6	70	5

It is observed from the Table that ARs/DRs are indifferent towards this element as their mean score tallies with the standard score. Respondents in the other two categories are of the view that access to information is time consuming and costly.

8. *Flexibility*

The information set-up should be flexible to accommodate changing needs. With the change of personnel, the information requirements can change.

So also, change in activities, problems and opportunities will tend to change the information requirements. Therefore, information set-up should be designed in quite a flexible manner so as to incorporate these changes. The responses of the three categories towards flexibility in the information set-up are presented in Table 8.

Table 8 - Opinions as to whether the Existing Information Set Up facilitates Flexibility

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	37	6.17
Section Officers	6	53	4.82
Assistants	6	78	5.57

It is seen from the Table that ARs/DRs find the set up flexible in the sense that information for tackling new situations is always forthcoming. The other two groups, however, are found to share the opposite view. They feel that there is dearth of information for tackling new situations.

9 *Exception Oriented*

The exception oriented information set up is based on the principle of management by exception According to this, the attention of the management should be focused only on those areas which are deviating from normal or desired course. Thus, if the performance is according to the targets and anticipation (or within permissible limits of deviation), it need not be highlighted or reported to higher levels. Only such information need travel up the organisation levels as major variations, problems and opportunities. The views of the respondents as to whether the existing information set up is exception oriented are given in Table 9.

Table 9 - Opinions as to whether the Existing Information Set Up is Exception Oriented

Category of Staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	23	3.83
Section Officers	6	59	5.36
Assistants	6	70	5

It is observed from the Table that the mean scores for all the three categories are less than the standard score. This means that all categories of staff are of the view that the existing information set-up is not exception oriented.

10. *Predictive Ability*

The executives need an indication of the likely events, problems and opportunities, so that they may be able to take decisions and actions in time, before the events actually take place. Therefore, the information set up must lead to output information incorporating forecasts, anticipation estimates, etc. The views of the respondents as to whether the existing set up provides enough information for making forecasts are given in Table 10.

Table 10 - Opinions as to whether the Existing Information Set Up has Predictive Ability

Category of staff	*Standard Score*	*Aggregate Score*	*Mean Score*
Assistant Registrars/ Deputy Registrars	6	39	6.5
Section Officers	6	57	5.18
Assistants	6	72	5.14

DRs/ARs feel that the information currently being provided is sufficient for making forecasts. Respondents in the other two categories, however, are of the view that predictions cannot be made with the information being supplied at present.

Conclusions

The following conclusions have emerged from the study :

1. Assistant Registrars/Deputy Registrars are of the view that existing information set up is accurate, provides information that is concise and reliable. They also feel the information set up is flexible and possess predictive capabilities. They, however, feel that the information set up is not exception oriented. They are also of the view that the information provided lacks consistency and relevance. As to whether the information supplied is need-based, they have no opinion.

2. Section Officers and Assistants are found to have an unfavourable attitude towards all the elements measured except relevance. While SOs are found to have a neutral attitude towards this element, assistants are of the view that the information supplied to them is relevant.

My Favourite Reading

My Readings : Casual and Serious

Meenakshi*

I can categorise my readings during the last two years in three sections, namely : (a) forced readings, (b) casual readings, and (c) inspiring readings.

As a supervisor of two Ph.D. works connected with gifted children, I was obliged to read works of L.N Terman, J.L. French and J. Khatena, rather seriously and books authored by B.D. Bhatt and A.S. Kirk a little less seriously. Two things in these books struck me the most. One : the modern concept of giftedness, and two : how much behind India is in the field of identifying and providing for the gifted children. Two more books: (1) *An inquiry into the correlates of achievement* by Dr. R. Ramaswamy, and (2) *Mental Health of Teachers* by Surya Nath Prasad have also to be included in the category of forced readings. I had to go through these books because I had been called upon to review them for the AIU Journal, *University News*. These books are printed versions of two Ph D. theses, weak and unimaginative as most Indian Ph.D. dissertations are

In the second category of my readings fall the books connected with my classroom teaching. I am associated with Guidance and Counselling and Measurement and Evaluation as a part of M.A. teaching. The titles *School Guidance System* by Merville C. Shaw and *Readings in Measurement and Evaluation in Education and Psychology* by William A. Mehrens came my way and I read them from here and there. I can't call it serious reading. Except newness in the treatment of the subject, the contents were old and hackneyed. I rarely found anything exciting or even refreshing.

Luckily in the third category of my readings I occupied myself with two such books which I can call inspiring. I would like to share their contents along with my reactions with the readers.

The first book is *The Battle of the Books* by Jonathan Swift. Readers may be aware that Jonathan Swift, born in 1667 in Ireland, was a famous English prose writer of the early 18th century. His outstanding works included *A Tale of a Tub, The Battle of the Books,* and *The Gulliver's Travels.* He expired in 1745 and his epitaph gives the following words :

"Here is laid the body of Jonathan Swift, Doctor of Divinity, buried here where fierce indignation can lacerate his heart no more. Go traveller and intimate of you can one who strove his utmost to champion human liberty".

The Battle of the Books was written in 1697 and it deals with the theme of — The Ancients Vs. The Moderns — a controversy which is as lively today as it was three centuries ago. Swift creates six episodes to present the conflict between the Ancients and the Moderns and advances very cogent arguments from both the sides. I share with the readers only three episodes.

First Episode

The Ancients and the Moderns lived separately on two peaks of a mountain, the former on a higher one and the latter on a lower one. Unsatisfied with their low position the Moderns asserted their claim on the higher peak, as it spoiled their view of the East giving light. They sent essays, one after the other, suggesting two ways — (i) The Ancients should hand over the higher peak to the Moderns, or (ii) They must permit the Moderns to cut short the Ancients' peak to their own level.

The Ancients rejected these demands on the claim of their aborginal home while the Moderns were only a dependent colony. The Ancients, liberal as they were, offered to provide the Moderns with shade and also help them raise their peak to the level of the Ancients.

The Moderns did not give ear to them and thus the tussel between the two continued. Even today the dispute is evergreen. The modern writers of books rather than to pen lofty ideas and values of the type of the Ancients, choose to condemn and decry the old values. They do not have the tolerance and magnanimity of the Ancients who promised to help the Moderns to rise to their lofty level and live in peace. The Moderns are more interested in lowering the Ancients' high peak dwellings than raising their own standards equal or even higher than that of the Ancients, even when the Ancients offer support for bringing equalization in stature.

Episode 2

The scene is enacted in the St. James Library. The Ancients and the Moderns quarrel over the merit of their literary achievements. Dr. Bently, the keeper of the library was a Modern and thus nursed a hatred towards the Ancients and so heaped the

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ancient books in dark corners and exposed them to moths, ants and dampness. Conversely, he gave nice places and good arrangement to the books of the Moderns.

This is exactly the treatment which our librarians give to the ancient books. Descartes, Aristotle, Plato, Chankaya or Ved Vias are all jumbled up as mere trash, in our libraries.

Episode 3

Through a broken window of the Library entered a bee and attempted to go to the spider's web in a high corner. The web had grasped many insects, flies and mosquitoes.

The bee's attack shook the web. The spider began to abuse the bee saying that he was superior to the bee who was a vagabond. About the self the spider spoke as an inventive mathematical and self sufficient. Th bee was condemned as a homeless plundere and free booter.

The bee told the spider that he remained in a corner with poison having pride while the bee wandered over plains and gardens to gather honey and wax which gave sweetness and light. Aesop heard these arguments with interest. He saw similarity between the Ancients and the bee on one hand and the Moderns and the spider on the other. Bee stood for Ancients' material and durability. The Ancients were proud of their language and imagination hard work, team work and honey.

Swift gives clear views about the merits of both modern and ancient literature and learning. Moderns have the superiority gain over the progress they have made for Science and Mathematics. The spider stands as a symbol for the Moderns due to its artistic network in web with geometrical perfection being arrogant and superior in complexion. The Ancients are proud of their good begotten gifts of wings, voice like the bee and render humanity the sweetness of honey and light.

I was much inspired by Swifts treatment of the theme. I confess I have become a pro-Ancients after reading Swift.

*** *** ***

The second book *Psychology and Effective Behaviour* by James C. Coleman (D.B. Taraporevala, Bombay) is a fat volume covering 568 pages of 9"x12" size in thin print. It makes a very rewarding reading. The information is coherent, highly referenced and authoritative. It is a complete book on the understanding of man and takes full cognizance of his humanistic, behaviouristic, psycho-analytic and existential models. In this book man has been pictured from different directions and in his different huges, shells and surroundings.

Part I of the book considers the basic nature of man, the determinants and patterning of personality development, and the factors in healthy and faulty development.

Part II focuses on man's basic strivings as well as on the unique motive patterns of individuals, on problems of adjustment and our reactions to them and on the nature of effective and faulty patterns of adjustment.

Part III deals with the group setting of behaviour, the interaction and mutual influence of individual and group, relevant findings and concepts concerning marital and occupational adjustment, and resources for personal growth and change.

Part IV attempts to show the application of contemporary psychological concepts and principles to the achievement of more effective behaviour through increased intellectual, emotional, and social competence and concludes with the crucial significance of our quest for values.

The book is highly informative. It has truly inspired me to reflect on psychological issues logically, scientifically and in a non-casual manner.

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"QUALITY IN TOTO IS OUR MOTTO"

Our Higher Education System

Emeritus Professor Dr. M.V. Pylee, Former Vice-Chancellor, University of Cochin, delivered the Convocation Address at the Annual Convocation of the Amravati University. He said, "The present system of our higher education is very rigid. The universities and colleges are following age-old rules and procedures which are not easy to be altered or changed. That is one of the main reasons why no significant changes have occurred in the education system, though considerable changes have taken place in socio-economic and political environment in the country, and scientific and technological development has taken place over the years." Excerpts

During the last forty years we have made great progress in the field of higher education, particularly in terms of quantity. There can be no doubt about it. But the progress that we made was largely in general higher education, in the fields of Arts and Sciences. There has been a certain degree of progress in technical and professional higher education as well. But that in comparison with general higher education is relatively inadequate for a country of India's size both in area and population. Out of a total of over 8000 colleges today, nearly 85 per cent belong to the category of Arts and Science Colleges. They produce lakhs of graduates year after year who find it difficult to get employment. As a consequence, the spectre of unemployment has been haunting the country with increasing intensity year after year.

Admittedly it is the most intractable of the socio-economic problems confronting the country. Its chronic character and rising trend throughout all our Five Year Plans has baffled the policy makers.

No one has any precise ideas as to the magnitude of this problem from the point of view of numbers. According to one estimate, the back log of unemployment at the end of the seventh Five Year Plan was about 35 million. Another estimate places it at a much higher level. The National Sample Survey indicated as long ago as 1985, the number of jobless in the country in the 15-59 years age group as around 43 million, indeed a forbidding figure. What that figure would be in 1996 is anybody's guess but certainly much larger and not less. On an average, every year some five million people join the ranks of employment seekers.

An extremely disquieting feature of this disturbing phenomenon is that a large proportion of the unemployed belonged to the educated class. According to the Planning Commission, in 1980 there were 3.47 million unemployed persons in India whose educational qualification was matriculation or above. The Commission estimated that this figure was expected to reach 4.66 million by 1985. What that figure in 1996 is anybody's guess. We do not have a detailed break-up of the unemployment figure into matriculates, graduates, postgraduates, technically or professionally qualified and others. But the alarming nature of this problem can be illustrated by giving some relevant statistics from Kerala. According to one estimate, the number of educated unemployed in Kerala in 1985 was in the range of 6 to 8 lakhs. Forty five per cent belonged to the age group of 15 to 24. Between 1981 and 1991, job seekers among matriculates increased by 128 per cent, pre-degree holders 283 per cent, graduates 558 per cent and postgraduates 253 per cent.

A paradox of higher education in the country is that even though the extent of unemployment among the educated is more among those coming out of the institutions of higher education of a general type, the demand for establishing more and more of such institutions is increasing year after year. And every state government succumbs to these demands and establish more and more of such institutions knowing fully well that they will aggravate the problem. Dealing with this aspect of the problem, the Planning Commission observes:

> "The unemployment rates in this category, especially in the youngest group (15-29 years) have been relatively higher for some time and an equilibrium between the growth of the educated labour force and employment opportunities has not been reached. The former is related to the demand for education which remains high because the private cost of education is low and higher level of education is always associated with better employment, higher level of incomes and better status in society. Many who would like to start work-

ing after secondary school find that they are neither able to get jobs, nor are they fit for self-employment. Thus they continue with higher education not because of a strong academic urge but rather because there is not much else to do."

What can we do to deal with *this undesirable situation*?

One obvious remedy, perhaps the most important, is to step up the rate of growth of the economy so that it can absorb a larger and larger number in each succeeding year. This is how Japan was able to meet the demand of the ever increasing number of educated job-seekers during the sixties and the seventies. In India, however, we cannot expect it to happen in the light of our experience of forty-five years of planned development. For, our average rate of annual growth during this period has been just about three and half per cent only whereas it had been over ten per cent in Japan for a continuous period of three decades and more.

Vocationalisation of our educational system at lower level, especially high school education is bound to produce a salutary effect. But our efforts so far in this directive have not been successful. It is easier to multiply the existing type of schools than attempting at the establishment of a different pattern. More than anyone else the teaching community is opposed to any such change. Without the teachers getting retrained and adapted to adopt the new system, any effort at educational innovation is bound to fail. Nevertheless the state cannot afford to ignore this as it is one of the most effective remedies.

Another remedy which will certainly have a salutary effect is to declare a moratorium on the establishment of new colleges and universities of the conventional type. Simultaneously, admission to the existing higher educational institutions should be rigorously restricted on the basis of merit. We have at present an open door policy regarding admission to colleges and universities. If we want to ensure jobs to all educated job seekers, we should at the same time ensure that the number of those admitted more or less tally with the number of employment opportunities created based on the rate of growth of the economy. We know that this is impossible under the present political system. All these show that the situation appears to be extremely difficult if not altogether hopeless.

While the effect of unemployment on the millions of job seekers is most frustrating, the problem has assumed alarming proportions in the case of the educated youth. This is reflected in the increasing unrest among the youth, violence, lack of interest in devoting attention to studies and even a wholesale denunciation of the existing system of education. Indeed, unemployment among the educated in several of our states has reached an explosive situation pregnant with disastrous social and political consequences.

The students to be enrolled in the higher educational institutions for the next twenty years are already born and it is difficult to deny them facilities for higher education on the plea that the supply of such personnel is already larger than the demand. Traditionally, our people have attached a high premium on education not only from the cultural point of view but also from the point of view that higher education is a sure means of securing a decent means of livelihood. In spite of the change in the situation as a result of a new economic outlook, the attitude of the people in this regard is yet to undergo corresponding change. Further those sections of our people who were so far underprivileged from the point of view of their share in the public services, will be entering these services increasingly in the days to come and this will consequently increase the pressure on the public sector.

Most of the young educated persons prefer salaried jobs, especially in the public sector, because of the importance they attach to fixed monthly income, job security and superannuation benefits. At the same time, it is obvious that the country will not be able to provide such employment to every job seeker however much it would like to do so. Moreover, even a comparatively larger increase in the public sector employment in itself will not produce any significant impact on the unemployment situation. This is because public sector employment is mostly in government services and such employment has practically very little spread effects. Therefore, its growth does not necessarily mean a proportionate increase in the other sectors and activities.

On the other hand, growth in the private sector which constitutes largely the private sector industrial and commercial ventures, besides enhancing the output of goods and services, also stimulates a variety of other associated activities like trade and transport and as a consequence generates its own spread effects on employment and income. However, setting up of large scale industrial ventures is not an easy task.

We do not yet have an adequate number of high quality men and women of entrepreneurial and managerial talent. Even when we invested huge amounts of capital in building up scores of technical and professional educational institutions, we hardly emphasised the need to develop in the products of these institutions the quality of self-reliance, the ability for innovation and the capacity to establish organisations, qualities that are essential in an entrepreneur. The crux of the unemployment problem, especially of the educated class, therefore, lies largely in the lack of entrepreneurial initiative in the educated class. Wherever such initiative is forthcoming, there the problem of acute unemployment among the educated is much less than other parts of the country.

Report of the UGC Committee on Vocationalisation of First Degree Education (September 1993) is a detailed exercise with a suggested plan of action to implement the scheme in a phased manner without bringing about any abrupt changes in the conventional system. It is apparently not an attempt to offer a panacea to the unemployment problem faced by the youth coming out of colleges and universities. Nevertheless, it has rightly suggested a mix of conventional with the vocational inputs to enhance employability of our youth coming out of the colleges.

There can be many mid-course corrections on the basis of exchange of perceptions and experiences, yet the scheme is being implemented despite its numerous difficulties and handicaps. There are thirty five subjects which have since been allowed to be introduced in about two hundred institutions country-wide with UGC assistance of over twenty crores. It is a bold initiative which should give a new direction to the relevance of higher education.

Although the implementation of the scheme is in a state of infancy, yet appropriate attention requires to be paid to it so that envisaged linkages between learning and assimilation, work experience and theoretical knowledge, precept and practice, employability and relevance are not overlooked. As it is, the collegiate sector which is being asked to match its initiative with the competing social demands on its capacity has to undertake new challenges. The conventional courses are to combine with more innovative components to match the contemporary challenge in the context of new demands. The participation of industrial establishments and managements whether government or non-government and the teachers have to be ensured. Such a participation has its own dimensions and problems in terms of coordination.

Japan had made spectacular progress during the last forty years and the credit for this is attributed greatly to its educated and trained work force at all levels. A study entitled "Japan's Intellectual Challenge" by Lawrence P. Grayson of the US National Institute of Education, commended Japan's strong commitment to education, particularly technical education. The study details the expansion of scientific and technical education at all levels in Japan both to provide the engineers and technicians needed by the industry for growth and technical development, and to produce the technically literate population required to facilitate the transfer and adoption of technology on which the nation's infrastructure has depended.

To illustrate the growth, in the thirty years form 1955 to 1985, the number of bachelor's degree in engineering awarded in Japan rose from 9,600 to 7,36,000 per annum. The US annual figure in this context was surpassed in 1967. By 1982 on a per capita basis, Japan was graduating 2.3 times as many engineers as the US. Based on the figures supplied by US Department of Labour, this report demonstrated a close coordination between the average annual rates of increase in engineering degrees and subsequent manufacturing productivity growth for both Japan and US over the years between 1950 and 1985.

Another noteworthy feature of Japan's education is that 21.6% of university students are in engineering. This proportion is the highest in the world. In USA engineering students constitute only 5.9%, UK 16.7% and Western Europe 15%. Almost half of graduates in Japan take up studies to postgraduation and of whom again half take up doctoral studies.

The number of students studying science, on the other hand, in Japan are far too few, only 3.2% while in the US they constitute 11.6%, UK 22.8% and Europe 13%.

The number of researchers per million of population in Japan is 360, largest in the world. USA has 310 and European countries 110 per million inhabitants.

Another feature of Japan is that on the periphery of universities there are several specialised research institutes to absorb the persons coming out of universities with new qualification. Students get access to research in these Labs and researchers get access to teaching young students, which makes teaching, learning and research supportive of one another Teaching and research in isolation i.e., when segregated from each other are found to be too weak and irrelevant. Besides, the application of new knowledge, new technology to manufacturing systems and various other professions and vocations is too slow. Teaching, research and extension are found to be more powerful and purposeful if coupled with each other. This is achieved in Japan by locating research laboratories on the periphery of universities. It is this strategy of producing large number of technically qualified people and buffing teaching and research under one roof and thus absorbing educated people in research activity of the country as a whole, a unique Japanese system which has been threatening European, US and UK economies.

In India, although the population is almost nine times larger than of Japan, yet the engineers graduating per year are negligibly small in comparison. The postgraduates and doctorate students in engineering are again insignificantly small. Research is almost completely absent and consequently we are importing technologies at much higher cost. Saving one rupee on research leads to spending ten rupees on import. It is the collaborators from abroad who have contributed greatly for the advancement of industry in India and not the higher education institutions. The cost paid in terms of royalty, etc as a consequence is much higher. Is this not like being penny-wise and pound foolish?

For priority courses like Computer Science, Electronics Engineering in which employment opportunities are abundant there is almost little funding from government and students have to learn the new required knowledge at their own cost mostly in self financing institutions. The youth as a result are being educated with scarce resources in inappropriate subjects and hence they remain unemployable. We are educating them in colleges and universities for old outdated skills which are not wanted. This is mainly because teachers teach what they know rather than what the students ought to learn. The tragedy of the situation is that what is wanted is not taught and what is taught is not wanted!

Japan has recently drawn up a Project Shiguma to meet skill shortages in information technology. The forecast is that by the year 2000, Japan will need more than 2 million software engineers, with an expected supply of the order of one million engineers, roughly 5,50,000 programmers and 4,20,000 systems engineers. Several measures are proposed to fill this gap. The Project Shiguma is started specially to upgrade the quality of software in Japan and to harvest the worldwide opportunities in Information Technology.

Are we prepared to catch such hi-tech world market opportunities? Are we turning out enough number of systems engineers? The question needs to be addressed and answered by all higher educational institutions. This is a priority area with skill shortages and high pay off in world economy. We have our youth with potential ability but for want of proper infrastructure and direction they tend to remain unemployed and opportunities missed. Universities and colleges ought to become more aware about opportunities arising out of emerging technologies which are short lived and attack them vigorously like a pack of wolves. Private institutes like APTECH, NIIT have shown a vision in starting a variety of courses, but the formal system of education like colleges and universities has lagged behind. Should we not in our institutions of higher education become alert and responsive to opportunities and skill shortages in global markets?

Japan with its vision, hard work and technical training of its people has been successful in pulling to it the centre of gravity of economic activity from the western world. This has become possible mainly because education, development and industrial growth in Japan have been linked reciprocally. The increased number of educated people have provided the manpower necessary for industrial development. In turn, economic growth has enabled the country to afford and create the necessity for the great expansion in the number of trained people.

Japan has installed Research Parks, Technology Parks, Incubation Centres etc, on the periphery of each university. We have not done anything similar or worthwhile in this respect. USA, UK and European countries have from 1980 installed a large number of such organisations and built bridges between industry and universities. In this respect, we are far too behind. When shall we wake up? Otherwise brain drain will continue and we shall remain using primitive technologies and perpetuating poverty.

Let us take another example, that from the United States. In the USA relatively recently has developed a new type of college called the Community College Demographic changes, attitudes towards public funding, social relevance of education and emerging occupational patterns now have a significant bearing on the direction and quality of post-secondary education. Though all educational planning is a little interrelated particularly in terms of the instructional methodology. delivery system and relevance of academic content of courses to employability of students, yet in a formal system of higher education, functional paradigms are comprehensive and specific with a hierarchy full of pre-determined parameters which contribute to close relationship of the society with its products. The educational goals are specific and curricula are comprehensively structured to meet their needs.

Establishment of Community Colleges in USA has been a noteworthy innovation in America to offer expansion of opportunities and availability of education beyond post-secondary level. As an institution of recent maturity, recognition and interest, it is more vitally linked to community requirements and works with a strong emphasis on a variety of vocational programmes offering a diversity of opportunities for life-long education, accessible to all. Its popularity has been due to its strong community relevance with its capacity to meet community obligations. The entire idea here is to give people an opportunity to meet their own needs and to achieve their own improvement. Community colleges admit students with an age span which may go from 14 to 80 years in a single institution with full time or part-time faculty. The financial support is available from the state, the community through local taxes, and the tuition fees. The genesis of such institutions has emanated from the known economic benefits of education, education as a tool of social mobility, education as a tool to break the social poverty barriers and also to involve the local community in the cause of education. The main idea is development of human resource with an eye on community benefit role.

The Community Colleges in USA provide service to an amazingly broad spectrum of community needs. Educational and social benefits accrue to the community because broader and more diversified educational programmes are planned and a greater interchange of ideas and experience takes place. They differ from other conventional colleges in their local decision-making responsibility for providing education to the entire community.

The concept of Community Colleges is now being studied in India with UGC placing this high on its agenda after having received a feasibility report of these colleges. The concept has gained consideration particularly in the context of spirited advocacy in favour of privatization of higher education. All investment in education is desired to contribute towards making it an asset with defined relevance and its utility to social needs. They are also being advocated in the context of emerging cultural shift and people's need for more education and employment.

In contrast, the collegiate system of post Independence era in India is a record of expansion without corresponding improvement in its core contents to fulfil social aspirations and goals. If the entire system is taken into account with retrieval and analysis of data, it is clear that the gamut of collegiate education despite its impressive statistical record, has been a puerile continuation of a system without catering to the spectrum of social attitudes, background, achievements, objectives and cultural determinants of students. The system has thrown up a multitude of unemployed, underemployed or improperly utilised products. At least social belongingness and a sense of security among the graduates have not been generated. There have been several Commissions and Committees to suggest corrective measures. But there has only been a compelled intensive discussion on questions as to how to maintain the status quo in colleges and universities in the country without substantially contributing to human resource development. At the same time it was always agreed that the community has a lot much at stake in the entire higher education effort.

As the management patterns

and scope of collegiate education are fast changing, search for new options and alternatives is inevitable. The financial crunch, student preferences and enrolment problems have made the approach difficult. With the expanding demand for educational opportunities, Distance Education mode has acquired greater attention and relevance. Through its relaxed entry rules, flexibility in course choice and for providing quality education through learner-centered services, it deserves to be strengthened Though quality of Open and Distance Learning varies from institution to institution like any other form of education, yet it is a worthwhile alternative and calls for greater support for its consolidation as a national movement for higher education.

It has been proved beyond doubt that it is cost-effective and is easily accessible. With advancing technology it is emerging as a strong channel to supplement the conventional system with its own target group and educational programmes with a fairly defined method of instruction and training. Open Universities demonstrate the openness of a learning system. With better management of student-support services it has many learner-friendly strategies to register its strong presence in higher education scenario with enthusiasm and relevance.

While the relevance of open university system is compelling, improving the existing conventional collegiate system is of utmost importance. What is required is to improve the present collegiate system and generate viability and strive for accountability at every level while making the programme of development and student services socially relevant. Increased emphasis should be on competency-related education rather than on courses terminating in routine award of degrees of no consequence. In all areas such as faculty, finances, infrastructure, student counselling, courses etc, new inputs are called for to revitalize the present system which has reached a stage of stagnation because of political lack of will and resistance to change at all levels.

While institutions may continue to expand to accommodate popular demand, related imperatives of such expansion should be identified and strengthened by the government while also not losing sight of principles of quality, quantity and equity. The existing colleges should be shaped into high performing institutions with a commitment to development and change with inbuilt safeguards to check social exploitation.

There was no attempt to modernise these conventional colleges with a view to making the products coming out of these institutions better suited to available employment opportunities. Every attempt to reform the system has met with stiff resistance. There is an organised vested interest entrenched within the institutions, especially the organised teachers' groups and to a lesser extent non-teaching employees to see that no reform is made possible in the existing system. Parallel colleges which number in thousands and the multitude of their kindred, college teachers who have a thriving business of tutorial systems, non-teaching employees who are opposed to any examination reforms, all of these have a share in this negative force.

Lack of interface between industry and trade on the one hand and higher educational institutions on the other, make the world of study and the world of work two worlds altogether unrelated. Students in the colleges and universities are largely ignorant of what happens in the industrial and trade world. They have little contact with them and they are not even remotely aware of the employment opportunities in them and their preparation in the educational institution has little relevance to the work situation in industry or trade or the tertiary sector. In fact, there is no exposure of the students to the problems of the world of work and they have no work culture.

The present college education does not prepare a student for any task in life. Even for the job of a clerk which most of them aspire to take up in life, they are utterly unfit. It is in this context that the introduction of job-oriented courses assumes great importance, to make the younger generation aware of the immense potentialities of preparing themselves for new jobs as well as the creation of new jobs.

The challenge that faces the country today in the field of education is, how as fast as possible it can introduce as many job-oriented technical and professional courses. This will have a two-fold effect. First it will reduce the pressure on the conventional colleges for admission. Secondly, it will increase and improve the employment opportunities of those coming out of the higher educational institutions. Above all, it will help the process of human resource development in the right direction which the country so badly needs.

(Contd. on page 20)

Technical Education in India (1)

STATE-WISE AVAILABLE PG SEATS IN DIFFERENT TYPES OF INSTITUTIONS (1994)

S. No.	State	No. of Colleges	Number of seats in IITs, IISc	Univ. & Dept.	RECs	State colleges		Total seats	Qualified in Gate '94
			Type A	Type B	Type C	Type D	Type E		
1	Andhra Pradesh	7	-	130	120	-	260	510	3042
2	Arunachal Pradesh	-	-	-	-	-	-	-	12
3	Assam	-	-	-	-	-	-	-	54
4	Bihar	6	-	-	40	100	360	500	627
5	Chandigarh	2	-	-	-	-	80	80	405
6	Delhi	5	310	-	-	90	150	550	513
7	Gujarat	6	-	270	70	-	140	480	313
8	Haryana	2	-	-	80	-	30	110	133
9	Karnataka	26	200	-	80	160	510	950	1051
10	Kerala	5	-	120	90	-	130	340	789
11	Madhya Pradesh	7	-	-	90	60	190	340	771
12	Maharashtra	13	320	-	70	200	400	990	2140
13	Orissa	2	-		80	-	30	110	398
14	Punjab	3	-	-	-	60	140	200	101
15	Rajasthan	4	-	-	40	400	250	690	489
16	Tamilnadu	12	350	300	130	510	100	1390	1169
17	Uttar Pradesh	10	250	690	90	-	310	1340	1178
18	West Bengal	6	490	650	80	60	60	1340	1279
	GRAND TOTAL	116	1920	2160	1060	1640	3140	9920	14464
	% Total Seat	15*	20%	22%	10%	17%	31%		

* 15 Colleges have zero out-turn since 1990, their seats are included here

Legend:

Type A : All IITs and IISc, Bangalore
Type B : Universities/University faculties
Type C : Regional Engineering Colleges (RECs)
Type D : Bigger size Engineering Colleges (AV out-turn during 1990-92 more than 50)
Type E : Small size Engineering colleges (AV out-turn during 1990-92 less than 50)

DISCIPLINE-WISE AVAILABLE PG SEATS AND GATE QUALIFIED CANDIDATES (1992-94)

S.No.	Discipline	Seats Available 1992	1993	1994	Candidates Qualified 1992	1993	1994
1	Agricultural	230	230	230	69	69	103
2	Architecture	170	195	195	90	90	168
3	Civil	1930	2010	2130	1610	2057	2700
4	Chemical	660	660	660	221	314	397
5	Computer	160	185	280	417	599	1289
6	Electronics	650	690	690	1177	1668	2458
7	Electrical	1380	1410	1410	741	1093	1572
8	Instrumentation	190	200	200	103	135	265
9	Industrial & production	460	460	460	228	331	515
10	Mechanical	1200	1285	1300	1153	1948	2551
11	Pharmaceutical	500	520	520	217	324	398
12	Textile	100	110	130	35	35	72
13	Others	1170	1230	1715	2118	2571	1976
	GRAND TOTAL	8800	9185	9920	8179	11289	14464
	Percentage Increase	-	4.32%	8%	-	38%	28%

(Contd.)

Source: J.P. Shrivastava. A Critical Review of Present and Future Post Graduate Technical Education in India. *The Indian Journal of Technical Education*, Vol 18, No. 2, April-June 1995.

(Contd. from page 17)

As a result, at least in the twenty-first century we would be able to provide a type of higher education which will satisfy the youth and prevent their running away seeking professional and technical educational facilities and opportunities wherever they are available.

It is not difficult to identify a large number of job-oriented courses which should be appearing to thousands of young people who seek higher education and help them prepare for a career of employment or self-employment.

A recent study *Report on Job-Oriented Courses, (Chairman, Dr. M.V. Pylee)* made at the instance of the Department of Technical Education, Government of Kerala State, bears ample testimony to this. The study has identified as many as over three hundred job-oriented courses at different levels of higher education, postgraduate, graduate, diploma and certificate courses. Considering the limited absorptive capacity of the organised sector at present, the courses have their emphasis on the development of capabilities which will enable the students to set up their own small enterprises with support from financial and other institutions. These capabilities should also enable them to diversify and upgrade the efficiency and productivity of domestically managed occupations.

The present system of our higher education is very rigid. The universities and colleges are following age-old rules and procedures which are not easy to be altered or changed. That is one of the main reasons why no significant changes have occurred in the education system, though considerable changes have taken place in socio-economic and political environment in the country, and scientific and technological development has taken place over the years.

The rules of admissions, selection of courses, evaluation of students, course structure, time-tables, class-size, methods of teaching, purchasing procedure, service conditions of teaching and non-teaching staff etc, are very difficult to be changed in colleges and universities. This has resulted in hindrance at every stage for innovation, improvement and modernisation.

Introduction of job-oriented courses requires a new outlook and attitude. If universities follow rigidly the existing procedures for the introduction of new courses, nothing much can happen in the near future. The cry for job-oriented courses will remain a cry in the wilderness or a distant dream.

The existence of autonomous colleges would help the introduction of job oriented courses. Unfortunately, their number is very small at present although the UGC has been advocating their introduction for over two decades, a very serious handicap for introducing innovation, improvement and modernisation without cumbersome and time consuming procedures.

To make job-oriented courses a success, on-the-job training is an essential part of such courses. Such training will have to be given in employing establishments under joint supervision of the establishments' supervisory personnel and the faculty of the educational institutions. The objective of this methodology is to expose students to the requirements of the world of work and to develop in them skills which are needed for specific jobs. On-the-job training should be provided during vacations so that other academic activities are not disturbed.

There must be provision for regular modification of the subject content and introduction of new subjects for newly emerging skills which are likely to change in the light of scientific and technological advancements.

Since the capability to become self-employed is a major objective, emphasis should be given on the development of entrepreneurial capabilities among students. With this objective in view, a paper common to all subjects and compulsorily taught, is an imperative. As part of entrepreneurial development enrolled students should with guidance from local employing establishments, be encouraged to set up small ventures Institutions should establish facilities for production of goods and services needed in the community. Such facilities will generate resources for the institution and what is more important, make training more realistic and attuned to the actual requirements of the job market.

The selection of institutions should be on the basis of well defined criteria. Among other things the emphasis should be on the desirability of identifying those institutions which can count upon the support of nearby training institutions and employing establishments; would not require large investments for development of infrastructural facilities and faculty competencies.

The preparation and production of textual and non-textual teaching-learning materials and faculty development will be the two vital tasks which must be accomplished before the introduction of job-oriented courses. Lead institutions, possessing the requisite infrastructure and staff competencies should be identified and entrusted with responsibility for these two tasks.

There is a need for creating general awareness among various segments about the nature, objectives and the implications of job-oriented courses. Apart from workshops and conferences, support of mass media and print materials for wider circulation should be ensured. Workshops of the representatives of institutions selected for the programme, lead institutions and employment establishments should be organised to orient the personnel to the requirements of the programme.

Selected Courses may be started on a part-time or full-time basis on Self-financing basis in colleges and technical institutions where basic infrastructural facilities are available. Non governmental agencies which are in a position to establish the necessary infrastructure and are interested to start select courses may be given recognition for the purpose after assessing their resources.

Much more is to be done to make job-oriented courses of wide variety a reality. Among these are the framing of syllabi, curricula, evaluation system, practical training, qualifications of teachers, identification of institutions and many others. However, what is urgently needed is to prepare our higher educational institutions to accept the need for change and take all the necessary initial steps to facilitate the change. The earlier we do it the better it is for the country.

NATIONAL INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

17-B, SRI AUROBINDO MARG, NEW DELHI - 110016

Applications are invited for 1 post of Senior Fellow
Scale of Pay Rs 4500-150-5700-200-7300
Age preferably below 50 years
Qualifications

Essential

i) Should have consistently good academic record with first or high second class (B+) Master's degree in the relevant field of study or an equivalent degree of a foreign university,
ii) Either a doctorate degree of an Indian or foreign university or published research work of a high standard or outstanding academic contribution in the relevant field(s), and
iii) At least 10 years' experience of teaching/conducting and/or guiding research in fields related to educational planning and administration.

OR

At least 10 years' administrative/professional experience at senior level in government in relevant field.

Desirable

Preference will be given to the candidates having worked in the areas of . (a) higher education, (b) organizational structure, function and behaviour, (c) women development and (d) science and technological development.

Deputation/Transfer

(a) Officers/Academics from Central or State Governments, Universities, Professional and Research Institutions and bodies.
i) holding analogous post on regular basis; or
ii) with 5 years regular service in post in the pay scale of Rs. 3700-5000 from government source or 5 years regular service as Reader or in the post in the pay scale of Rs 3700-5700 or equivalent; and
(b) Possessing qualifications prescribed for direct recruits.
(period of deputation shall not ordinarily exceed 4 years)

Note 1· In case of persons drawn from administrative cadres the condition (ii) above will not apply but. there should be evidence of academic and innovative contributions in the field of educational planning and administration
2 : The benefit of added years of service under Rule 30 of CCS (Pension) Rules, 1972 shall be admissible on fulfilment of all the conditions under these rules in the case of direct recruits
3 Candidates already in employment under government/ semi-government organisations/autonomous bodies should send their applications through proper channel.
4 · Other things being equal, preference will be given to SC/ST candidates.
5 · Candidates from outside Delhi called for interview will be paid single return second-class train fare by shortest route

Applications from candidates fulfilling the required eligibility conditions alongwith attested copies of certificates, a recent passport size photograph and a non-refundable crossed postal order of Rs. 20/- (not required in the case of SC/ST candidates) drawn in favour of the Acting Registrar, National Institute of Educational Planning and Administration, 17-B, Sri Aurobindo Marg, New Delhi-110016 **within one month** of the publication of this advertisement.

O.P. Sharma
Acting Registrar

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Symposium on Area Studies

As part of its ongoing Silver Jubilee celebrations, the Centre for African Studies, University of Bombay, hosted a two-day symposium on the Area Studies Programmes in Indian Universities. The symposium was inaugurated by Dr. (Smt) Snehalata Deshmukh, Vice-Chancellor, University of Bombay.

The specific agenda of the symposium was a full scale review of some two dozen Area Studies Programmes that are an integral part of select Indian Universities. This exercise, the first of its kind in recent years clearly emphasised relationship between Area Studies Programme and the vast and varied fields of the several social sciences. The proceedings also highlighted the need for a more proximate understanding of the work of the Area Study Centre in terms of implications for policy making and policy analysis accompanied by sound theoretical underpinning especially against the backdrop of the strides made by information technology.

The two day meet resulted in a rough and ready — an impromptu no — holds barred audit of the subject under review. As such, the evaluation was intended to provide the administrators of higher education as also others in responsible position valuable tools for shaping the policies that will guide all such activities from the perspective of the future. The organizers too, felt that such an intense interaction would help shape the research agenda/programmes in terms of macro and micro approaches to Area Studies programme in particular. To a substantial degree, both the objectives were met.

Sensitive issues ranging from the financial crunch perennially surrounding the academic endeavours got repeatedly mentioned. Constant references were also made to the total absence of, or, at the best of a highly trimmed field trip for the scholar entrant to the programme. The inability of the subject experts to have updating visits was often mentioned too. The symposium also afforded an opportunity to crystallize the conceptual and operational dimensions of Area Studies Programme in the country.

The four session symposium was attended by scholars from the Indian academia who have devoted their life time to enriching the field of Area Studies Programme, and have been embodiments of learning and excellence in specific areas. Notable among those were Prof. M.S. Rajan, Prof. M.S. Agwani, Prof. Anirudha Gupta, Prof. Daleep Singh, Prof. K.R. Singh, Prof. Ramakant and Prof. A.P. Rana.

Orientation Programme for Teachers

The Academic Staff College of Himachal Pradesh University recently organized its 28th Orientation Programme. Inaugurating the programme, Prof. C.L. Kundu, Vice-Chancellor, said that the college teachers had a greater responsibility of bringing about socio-economic transformation and solve the problems of society. The disadvantaged group of the society needed a special attention on the part of educationists, he added. Prof. Kundu emphasized the importance of modern teaching-learning strategies for improving the quality of higher education.

The programme team consisting of Prof. Yoginder Verma, Director, Prof. A.S. Sethi, Coordinator, and Dr. Kiran Rekha, Assistant Director, designed the whole programme in the light of participants' needs, UGC's guidelines and emerging social scenario. The needs of participants were identified through various exercises such as breaking the ice, group discussion, brain storming and pre-orientation awareness test.

In order to develop appropriate teaching skills and conceptions, a number of orientational techniques were utilized. Some of these included panel discussion, multiple quiz, reflective sessions, workshop, teaching game, teaching presentation, filming teaching by participants, self encounter, role playing, group dynamics, buzz session, think tank, etc. During the programme, the participants were made to realize their role and improve their sensitivity towards teaching situation. The techniques of self assessment and self encounter were used for sustained professional development. Topics such as human rights, women studies, value education, media and election, secularism, national integration, public interest litigation, distance education etc were thoroughly discussed.

Dr. P.H.S. Rao, Additional Secretary, University Grants Commission, in his valedictory address, highlighted the achievements of higher education in the country. He cautioned the policy-makers and educational administrators against the menace of mushroom growth of educational institutions and declining values. "The teacher has to play a pivotal role in transforming the present day ill-society into a prosperous one for which he has to assume additional role of a guide, philosopher and problem solver", he added.

ASC Hotel Management Institute

The Army Service Corps Centre (ASC), South, is reported to have established the Army Institute of Hotel Management and Catering Technology (AIHM & CT), which is scheduled to commence its first three-year degree course with effect from August.

Affiliated to the Bangalore University, the subjects offered by the course are based on the syllabus and guidelines of the university. The institute is open to the children of serving personnel and pensioners of the regular army only. Located at the ASC Centre (South), the institute aims at imparting high quality hotel management education. Accommodation for students and wardens and other facilities exist, as the Centre also imparts training in catering technology to the officers and men of the army.

According to Brigadier P K Gulati, commandant at the Centre, the AIHM is envisaged to contribute towards the welfare measures for the children of serving personnel and pensioners of the regular army.

Kakatiya Education Deptt. Upgraded

The Department of Education of Kakatiya University is reported to have been upgraded into Institution of Advanced Study in Education (IASE). This was revealed by the Vice Chancellor of the University, Prof. Y Vaikuntham, who said that an amount of Rs. 82.76 lakh had been sanctioned towards the first instalment of central assistance for various items of non-recurring expenditure out of which Rs 31.38 lakh would be spent on civil works and Rs 20 lakh on equipment. The second instalment of Rs 31.38 lakh would be spent on the expansion of IASE.

The IASE, he said, would function on permanent basis from the next academic year and would concentrate on imparting orientation in contrast and methodology of teaching. The IASE would impart in-service training to all the headmasters and teachers in secondary schools and the teaching staff of District Institutions of Educational Training in the jurisdiction of Kakatiya University, viz., Adilabad, Karimnagar, Warangal and Khammam, he added.

The Vice Chancellor added that the AICTE sanctioned Rs 34 lakh for various research projects in the university last year, out of which Rs 9 lakh was spent for the Centre for Environmental Education.

He disclosed that the university's Centre for Adult Education completed the survey of identifying villages and measures were underway to adopt them, with a financial assistance of Rs 4 lakh from the AICTE.

Prof. Vaikuntham said that the measures were stepped up for the development of research, infrastructure, staff, and diversification of courses in the university.

Specialisation Courses in Management

Guru Jambheshwar University, Hisar, has introduced three innovative courses in Business Management. In addition to the already existing MBA course the University offers specializations in Finance, Marketing and International Business. Prof. K.L. Johar, Vice Chancellor of the University said that there was a need to prepare managers in various specialised fields of expertise.

MBA (Finance) will provide training in addition to general management for the effective and efficient management of the finances in public and private sector. Similarly, MBA (Marketing) will provide highly skilled training in the field of marketing of goods and services. Prof. Johar said that with the increase in the trade between India and other countries there was a need for managers who were specially trained to handle International Business. In order to meet the job requirements in this field the University had offered a course in MBA (International Business).

News from Agricultural Universities

UAS to Commercialise Technologies

The University of Agricultural Sciences (UAS), Bangalore, has evolved a unique strategy to commercialise its technologies in collaboration with the private agro-based and allied companies. It is expected to aid in the macro-development of agriculture in the State, besides benefitting the farmers, UAS, scientists, students and companies.

The UAS has over the last three decades established fruitful linkages with the Department of

Agriculture and the allied sector to serve farmers. This time, it has sought to tie up with the several industries and organisations, which are agriculture based, for a sustained industry-university research programme.

As a result, several technologies, which are not getting enough attention are likely to get importance. This is expected to usher in a new revolution where the benefit of commercialised technology is all set to reach the end users — the farmers.

The UAS's hope of commercialising its technologies got a definite shape in November last, when representatives of more than 80 agro-based and allied industries, and 100 scientists from the UAS interacted to finalise the projects for commercial development.

The main objective of this interaction was to identify areas of partnership and translate them into concrete collaborative programmes. Potential research areas which need funding for testing, mutual sharing of research facilities, provision for training and expert guidance to industries, and participation of the UAS scientists have been envisaged before formulating a project plan and signing an agreement.

Discussions were held concerning 11 areas, each headed by a group leader. Biofertilizer technology and fertilizer technology, farm machinery implements and processing equipment, horticulture technology, agriculture technology, technology for animal and poultry development, technology for dairy products, fisheries technology, food technology, plant protection technology, sugar industry and seed technology were the areas covered during the deliberations.

A project on fisheries, involving Rs. 50 lakhs, had been finalised said Dr. Bisliah, Head, Department of Economics, UAS, who is overseeing the venture. Once the specifics were worked out the scientists will prepare a project plan in consultation with the industries concerned and submit a report to the UAS. The report then comes up before a five-member screening committee for scrutiny. The committee will look into several aspects relating to the feasibility of the project, available infrastructure, manpower and the like before signing a Memorandum of Understanding.

The industries could have the motive of making profits but the UAS has a view to pass on the benefit to the farming community, said Dr. Bisliah, who also heads the Project Planning and Monitoring Cell (PPMC).

'Besides, this venture should be able to upgrade the knowledge of the UAS scientists but our overriding concern is to ensure that it is mutually beneficial,' says Dr. Bisliah. 'The discussion being held on enhancing the quality (shelf-life) of seeds, and anti-virus net to prevent spread of plant virus, and white-grub studies on mass trapping techniques, are some of technologies aimed at providing benefit to farmers'.

There are many other technologies available with the UAS. While some are being discussed for collaboration, others are in the pipeline. One such available technology is making chapati flour for diabetes patients. This project could be finalised at any time as the scientists are providing last-minute touches, he added.

Some of the advantages, according to Dr. Bisliah, are that it would help students to train in various production activities such as producing quality potato seeds by which the farmers get them at a marginal price, the scientists gain valuable experience by testing their technologies under field conditions and the industries get the profit. The UAS, to some extent, would be benefited and the resources would be utilised towards research projects.

The Vice Chancellor of the UAS, Dr. G.K. Veeresh, said that the programmes had met with an overwhelming response.

Increasing Pulses Production

A Seminar on "Strategies for increasing pulses production in Maharashtra" was held at Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Sponsored by Hexamar Agricultural Research & Development Foundation, the seminar was inaugurated by Dr. B.G. Bathkal, Vice Chancellor of the University. Dr. Bathkal, in his address, emphasised the need to increase per ha productivity of pulses which remained static for last five decades. He urged for better interaction with the scientific and development organizations in public as well as private sector, Co-operatives, NGOs to make agriculture more profitable enterprise, in the changing scenario of global open market and liberal national economy.

A special session was held for discussion on prospects and problems in pulses seed production and certification. Dr. V.D. Patil, Director, Maharashtra State Seed Certification Agency and officers from Maharashtra State Seed

Corporation and scientists from universities took part in the discussion. In Kharif mung and udid seed plots were often damaged by rains; the varieties were sensitive to environmental variation for which off season multiplication was not possible. It was suggested to spread their seed plots over other locations and build at least 50% additional buffer stock of seed. In view of the increasing demand for quality seed in Maharashtra, it was necessary to produce matching quantities of nucleus and breeder's seed which was not feasible with present infrastructural facilities. It was envisaged to establish variety-wise nucleus seed production units for improving the situation. The problems of certification likely to be posed in future were also discussed.

Pulses improvement programme of major pulses in Maharashtra was reviewed and need based breeding emphasized. Recommendations on crop production technology and plant protection strategies to improve pulse production in the state were also made.

Hexamar Agricultural Research & Development Foundation (HARDF) award was presented to Dr. S.R. Naik, from Hindustan Antibiotics Ltd. by Shri V.D. Patil, for his significant research achievement in toxicology and biopesticide.

News from AICTE

Infrastructural Support for Excellence

To enhance the institutional facilities to the level of excellence and to be comparable with the best institutions elsewhere, the All India Council for Technical Education has launched a scheme of "Infrastructural Support for Excellence in Engineering and Technology" (ISEET) where the institutions/departments identified will be supported to raise technical equipment used in manufacturing process, design and testing in the areas of direct industrial relevance.

With a view to bring the high performance institutions under the purview of this scheme, suggestions have been invited regarding the names of some existing technical institutions which can match this input and have a proven record of high quality research performance and strong industrial tie-ups in the identified areas of national priorities. Since the scheme provides for undertaking innovative research with strong possibilities of industrial application, one or two frontier areas of engineering and technology may be given emphasis under the scheme.

News from UGC

Countrywide Classroom Programme

Between 8th to 15th June, 1996 the following schedule of telecast on higher education through INSAT-ID under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 6.00 a.m. to 7.00 a.m. and 1.00 p.m. to 2.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission
6.00 a.m. to 7.00 a.m

8.6.96

"Slicing n-cubes"

"Little Hands at Work"

"Environmental Pollution"

9.6.96

"The Clay, the Flesh, the Spirit-Part-2"

"New Vistas in Carnatic Music"

"The Week Ahead"

11.6.96

"Bookfare-Part X: Management"

"Study of Elastic and Inelastic Collisions"

"Nature's Child : Adivasi"

13.6.96

"Extinction of Dinosaurs Part 2"

"Uninscribed Coins of Andhra"

"John Clifford on William Shakespeare"

15.6.96

"New Horizons"

"A Breath of Fresh Air"

IInd Transmission
1.00 p.m. to 2.00 p.m

8.6.96

"Travelogue of Hindustani Music-part 2: Khayal"

"Mahatma Gandhi as a Journalist Part-2"

"Was all the Training In Vain: When musele Fatigue Sets in"

9.6.96

"No Telecast"

10.6.96

"The Week Ahead"

"Concept of Colour-Part I: Coloured Innuendoes"

"Human Resource Development-Part II: Salary Structure"

11.6.96

"University Industry Integration-Part III"

"Autonomous Colleges: Progress and Perspective"

"Sight"

12.6.96

"Fibre Materials and Fabrications Part I"

"Kelkar Museum-One Man's Passion for the Past"

"Regulation of Gene Expression"

13.6.96

"New Horizons"

"Poet's Conception of Rag and Raginis"

14.6.96

"Game Theory - Part 4: Linear Programming Method"

"Effects of Globalisation"

"Ecology of Thermal Springs"

15.6.96

"Endoskeleton of Fowl"

"Travelogue of Hindustani Music - Part: 3 Light Classical Music"

"Handicraft - The Ballad of Creation"

Hindi Telecast

प्रातः 6.00 से 6.30 बजे तक

10.6.96

"खनिजों के भौतिक गुण धर्म"

12.6.96

"सृजनहार"

14.6.96

"रुप एवं विचार, भाग - 2"

News from Abroad

Women in Science and Technology

Although more than 25% of the 20 lakh persons in India who are in the science and technology field at the undergraduate level or with master and doctoral degrees are women, studies show that women tend to drop out of science education at higher levels. Three quarters leave after the first degree; just 1% complete a PhD; the same is true for engineering. Only in medicine do women continue advanced studies.

These are some of the facts revealed in UNESCO's World Science Report 1996 released in Paris recently. This biennial report focuses, this time, on the gender dimension of science and technology. It shows that in many parts of the world, getting into science and technology and staying there are great challenges for women.

In India, pure science and medicine have consistently ranked high among women's preferences. Nearly 88% of science degree holders are in pure science; 8% are in medicine and a little under 3% are in engineering/technology. In fact, curiously, the recent growth in the numbers of women enrolling in engineering courses shows signs of slowing, even reversing. Women's choice of subjects has followed a certain pattern: in science they choose biosciences and chemistry; in engineering, electronic and electrical engineering; in technological courses, pharmaceutical technology and medical laboratory technology; and in medicine, obstetrics, gynaecology, peadiatrics, pharmacology, bacteriology/pathology, speech/hearing therapy, physiotherapy and dentistry.

The World Science Report 1996 poses two key questions: Science by whom? and Science for whom? It provides data and information on women's participation in scientific and technological education, analyses the range of obstacles to women's equal opportunities in science and technology, examines the different impact of technological change on the lives of men and women, explores the role of women in traditional knowledge systems and reviews the history of women in science.

In India nearly two-thirds of working women scientists and technologists are engaged in teaching and another one-fifth do administrative work. Only 3% are in R&D and they have an insignificant presence in such technical jobs as quality testing, operation, maintenance and industrial production and in higher managerial positions.

The report demonstrates that beyond the obvious inequity of access to education and careers for girls and women in S&T, the benefits are not equally shared.

Interestingly, the Report says that women and men "tend to have some distinctive interactions with nature because of their differing biologies, but also because they are assigned different social roles and activities and thus have different interests in and needs from and hopes about how nature 'works' and the resources and dangers it provides." It goes on to state that men and women organize their laboratories and work projects differently and "how scientific projects are organized has an effect on what we end up knowing about nature's processes."

It also throws up, along the way, the hypothetical, million dollar question: "if the assignment of gender roles in S&T projects were reversed, how would our knowledge of nature be different? In many research areas it would probably not differ at all; but in many others, it would do so. It would be useful to consider and study how scientific priorities and representations of nature might change if women were to direct national health institutes, environmental regulatory agencies, regional agricultural policy, projects to eradicate poverty, and generally, if they were more represented in policy-making in governments, science and multinational corporations."

The Report states that the "invisibility of women's 'landscape' in S&T research and application has had a negative impact on women's income and well-being." So too, has the failure of development planners, scientists and technological innovators... to see and recognise that women may understand the natural environment differently from men and have very different interests and goals in the use and management of their local environment.

GIS Application Centre

Formally approved in March 1995 and functionally established in September 1995, funded by UNEP/EAP-AP, under the School of Environment, Resources and Development (SERD) and operated jointly with the Space Technology for Applications & Research (STAR) program, the GIS Application Center (GAC) of Asian Institute of Technology (AIT), Bangkok offers training services particularly for engineers, managers, planners, scientists and other development agencies of the countries of Asia and the Pacific Region, as well as consultancy services to organizations.

Training services are mainly on Geographical Information System (GIS) technology and its application in the areas of natural environment such as agriculture, water resources, forestry, soil conservation, watershed management, land development, bio-diversity, etc. Provision of these services can take the following forms:

Contractual: These are programs customized to the needs of a particular organization, with development and implementation costs borne by that organization. The program consists of courses designed, developed and implemented according to the terms of reference and specifications of the requesting client organization. Program delivery makes use of any of the following or combination of intensive residential seminars/workshops/tutorials, project visits, and on-the-job training. The program may be delivered in Thailand or on-site in client's country.

International: These are programs regularly advertised and conducted at AIT with participation open to qualified applicants. Their training expenses are borne by their respective organizations or sponsors (international funding agencies, non-governmental organizations, foundations, etc.). These programs are conducted thrice in a year tentatively in

April, August, and December with duration varying from 3 to 12 weeks which include different modules such as Introduction to GIS (for the beginners), Advanced GIS (for GIS technicians), Image Processing & Global Positioning system with necessary field trips, Photo Interpretation & Integration of RS/GIS, etc. These programs are designed targeting to three levels of officials - technical level (technicians), professional level (middle managers) and executive level (decision makers). The programs will be designed in such a flexible way that a participant can attend any of the modules suitable to him/her or participate in the full 12 weeks course. The training manual of UNEP/EAP-AP will be followed with some modifications in all the training programs.

The AIT also offers technical assistance and consulting services to public and private organizations in such areas as: Application for RS/GIS in different ecozones; Image Processing & Photo Interpretation; Establishment of GIS database; Cartographic database design; Analysis of GIS database; and Writing of a case-study.

Inquiries on GAC programs and services can be addressed to: Dr. Kiyoshi Honda, Assistant Professor, Space Technology Applications & Research (STAR) Program, School of Environment, Resources and Development (SERD), Asian Institute of Technology (AIT) G.P.O. Box 2754, Bangkok 10501, Thailand OR Mr. Shanker Raj Pathak, Manager & Program Specialist I, GIS Application Center (GAC), STAR Program, SERD, AIT, G.P.O. Box 2754, Bangkok 10501, Thailand.

International Conference on Educational Administration

The eighth Regional/International Conference of the Commonwealth Council on Educational Administration (CCEA) will be held on 19-24 August 1996, at Kuala Lumpur, Malaysia. The theme of the conference is Indigenous Perspectives of Educational Management. The conference is intended for teachers, researchers, professors, administrators, consultants, technologists, government officials, managers and decision-makers.

The objectives of the conference are to (i) examine the implications of indigenous theories and practices of educational management for future education and training programs for educational administrators at all level; (ii) share information about current and evolving educational management theories and practices; (iii) foster discourse across cultures regarding educational management practices in isolated areas, in culturally and economically disadvantaged areas and in institutions which are at risk; (iv) recommend policies and actions which foster collaboration and cooperation among Ministries of Education, Educational Management professional bodies and associations, universities and educators world-wide; and (v) identify and disseminate seminal materials on educational management from the major/dominant cultures and perspectives.

Further details may be obtained from Prof Sneha Joshi, 'Sneham', 88, Vasana Road, Bh./Manisha Society, Vadodara - 390 015 Fax: 091-265-339633.

ADARSH EDUCATION SOCIETY'S

ARTS, COMMERCE & SCIENCE COLLEGE,

HINGOLI

(DIST. PARBHANI)

ADVERTISEMENT - II

Applications alongwith the true copies of the certificates/testimonials are invited from the candidates for the following post in SENIOR COLLEGE so as to reach undersigned within TEN Days from the date of Publication.

1) One full time Lecturer in DAIRY SCIENCE (ST)

Qualifications & Payscale :- As per Swami Ramanand Teerth Marathwada University, Nanded & U.G C Rules.

Post is reserved for ST Candidate.

If candidates from reserved category are not available the same will be filled in from open category candidates for One academic year only.

K.K DUBE (President)

EKNATHRAO NILAWAR (Acting President)

DR.J.M. MANTRI (Principal)

A LAUDABLE EFFORT

A K Bag*

Anjana Chattopadhyay. Encyclopaedia of Indian Scientists. New Delhi, Reliance Publishing House, 1995. Pp. xiii+259. Rs. 395.00, $95.00

The book presents short details of about 1800 scientists in alphabetical order of their names with reference to their biography, education, career, fellowship, scientific achievements, awards & honours including sketches of scientists wherever available. Effort has been made to standardise the information under these sub-titles, though the format could not be followed uniformly for ancient and medieval scientists. The book is unique in its planning in the sense that a serious effort has been made perhaps for the first time in India to accommodate about 109 scientists from ancient, 127 scientists from medieval and 1574 scientists from modern periods in one handy volume. For these activities a lot of search and labour were involved which the compiler, being computer trained librarian could manage. She has depended heavily on publications brought out by Indian National Science Academy in the area of History of Science, Fellows Compendium published during its Golden Jubilee Volume besides other publications.

The use of the term scientist for ancient and medieval experts is a misnomer. The term was only invented by the Cambridge cleric and philosopher Whewell in the 19th century — science being relatively an unorganised activity. Identification of ancient and medieval experts correctly along with their expertise was not an easy task. It is specially critical when there is more than one scientist by the same name. Obviously there is confusion over Mahavira (825 A.D.), the author of the well known mathematical text, *Ganitasarasamgraha* with Mahavira (5th century B.C.), founder of Jainism. Proper identification has not been maintained and left with four Nagarjunas instead of one famous alchemist. Likewise, to designate Lord Buddha as physician, Kanada as physicist, Patanjali, the commentator on the Panian grammar as physician, vedic commentator Sayana as Ayurvedic scientist, is a bold statement. No less controversial is the inclusion of Al-Biruni, Alauddin, Ali Qushji, Al-Raji, Ulugh-Beg, the Central Asian scholars in the Encyclopaedia of Indian scientists. Out of these, Al-Biruni came only to India and studied Indian manuscripts with the help of Indian pandits, but no other scholar came to India and had any direct contact with the Indian science. The modern scientists had similar identification problem. There is complete confusion between Sivaramakrishna Chandrasekhar, specialist on liquid crystal who was born on 6th August 1930 and Subrahmanyam Chandrasekhar, the Noble Laureate astrophysicist and the nephew of Sir C.V. Raman, who was born on 19th October 1910. The sketches of some of the modern scientists are not faithful and upto the mark.

In spite of these limitations, the effort is laudable. It is indeed a very painstaking and time consuming job to present an authenticated account of so many scientists covering such a long period and wide canvas. I agree with the author that there is a real need to have such a type of ready reference books on Indian scientists and this Encyclopaedia has met considerable demands. More such books based on correct assessment of ancient, medieval and modern Indian science are the need of the hour. The author, it is hoped, will surely take care of whatever shortcomings it has in future editions. The author indeed deserves our thanks for whatever success she has achieved in this critical exercise.

Dear Subscriber,

Kindly renew your Subscription in time for uninterrupted supply of the journal.

Requests for replacement copies may please be made within three weeks of the date of publication of a particular issue.

While corresponding please quote Subscription Number.

Coordinator, History of Science Programme, Indian National Science Academy, New Delhi-110 002.

UNIVERSITY OF MADRAS

MASTER OF COMPUTER APPLICATIONS (MCA) - 1996-97

Applications are invited for admission to the three year Master's Degree course in Computer Applications (MCA) in the University Department of Computer Science.

ELIGIBILITY: Candidates with Bachelor's degree in Computer Science/Mathematics/Physics/Statistics as the main subject of study or B.Sc. in Applied Sciences or B.Com degree with Business Mathematics and Statistics or Mathematics/ Statistics as subjects of study in Main/Allied level or B.Sc. Chemistry with Mathematics and Physics as allied subjects or B.E.S. or B.E. degree of this University under 10+2+3 Scheme or 11+1+3 Scheme or of any other Institution recognised by the University as equivalent thereto.

Selection will be made based on the score in the Entrance Test.

HOW TO APPLY: Prescribed application can be had from the Registrar, University of Madras, Chepauk, Madras - 600 005 either in person or in mail enclosing Self-addressed cover of 29 cms x 13 cms with Rs. 2/- stamp by submitting a written requisition on payment by demand draft obtained from any nationalised Bank drawn in favour of the Registrar, University of Madras, Madras-5 for Rs. 175/- (Rs. 120/- in case of SC/ST candidates supported by Community Certificate from a Revenue Official not lower than the rank of Deputy Tahsildar may be enclosed). The cover containing the requisition for application form must be superscribed as APPLICATION FOR ENTRANCE TEST TO MCA COURSE.

LAST DATE FOR ISSUE OF APPLICATION IS : **17-06-96**

LAST DATE FOR RECEIPT OF APPLICATION IS : **20-06-96**

The candidates who have written April 1996 Examination may also apply.

The University reserves the right not to conduct the above course if the circumstances so warrant.

REGISTRAR

SHRI GURU GOBIND SINGHJI COLLEGE OF ENGINEERING & TECHNOLOGY

VISHNUPURI, NANDED

Admission to three Semester M.E. Programme commencing from August 1996-97 (The course are funded by Govt. of India and affiliated to Swami Ramanand Teerth Marathwada University, Vishnupuri, Nanded).

GENERAL :

a. Applications in prescribed form (Separate application form necessary for each course) are invited for admission to the three semester Master of Engineering Programme offered as given below

i	Electronics Engineering	18 Seats
ii.	Instrumentation Engineering	18 Seats.
iii.	Civil Engineering (Water Management)	18 Seats
iv.	Textile Technology	18 Seats.
v.	Mechanical (CAD/CAM)	18 Seats.

b. i Candidates passing Bachelors Degree in appropriate branch/related branch of Engineering/Technology or any other examination recognised as equivalent to it, are eligible to apply.
   ii. Candidate appearing for qualifying examinations are also eligible to apply.

c. i. Candidates possessing valid GATE score will be admitted on the basis of their interse merit.
   ii. Candidates not possessing valid GATE score will be admitted on the basis of merit list of written and oral test conducted by the Institute.

d. Candidates possessing valid GATE score will be eligible for scholarship as per Govt. of India norms. However, for M.Text. (Textile Technology) & M.E. CAD/CAM course no candidate will be eligible for scholarship. Suitable candidates may be offered contributory lectureship or other work based on the needs of the Institution.

e. Seats are reserved for SC/ST category and sponsored candidates as per rules A few seats in Civil Engineering (Water Management) course are reserved for Irrigation & Command Area Development Authority Engineers.

HOW TO APPLY:

Request for application form and detailed information broucher should be made along with a Demand Draft for Rs. 300/- (Rs. Three Hundred only) in favour of the **Principal, Shri Guru Gobind Singhji College of Engineering & Technology, Vishnupuri, Nanded** drawn on State Bank of India, Nanded.

Issue of application forms will commence from : 01.06.1996
Last date for receipt of completed application : 01.07.1996

PRINCIPAL

STUDYING INTERNATIONAL RELATIONS: A COURSE IN RESEARCH METHODS AND RECENT TRENDS

Under the Ford Foundation's grant to the ASRC, *a two-week course* in international relations is being planned to help younger (below 35 years) research scholars and college/university teachers in India in enhancing their skills in research and in updating their knowledge in the field. Faculty will consist of senior scholars and teachers from India and abroad.

- The Course will focus attention on "how" to do research systematically, and how to write the dissertation. Invited faculty will discuss their recently published work as case studies in research and writing. Some lectures may be devoted to latest trends of research in international relations. Participants are expected to make a presentation of their current research. Enrolment will be limited to 25 participants.
- Certificate of participation will be given to those who successfully complete the Course.
- Scholars registered for M.Phil/Ph.D. in the field of international relations (broadly defined) and young faculty members teaching courses in the subject in colleges and universities in India are eligible to apply.
- ASRC provides food and accommodation in the hostel (for outstation participants on a double occupancy basis).
- Selected candidates are eligible for round trip sleeper class train fare.
- The Course is scheduled to be held during 9-20 December 1996 at the ASRC.
- Last date for receiving the applications in prescribed form is **15 October 1996.**

For details contact:

Dr B Ramesh Babu
Senior Academic Fellow (International Relations)
American Studies Research Centre
Hyderabad 500 007
Tel: 7018608/7018609 Fax: 040-7017114

Amravati University, Amravati (Maharashtra)

ADMISSION NOTICE

Common All India Level Entrance Examination for admission (session 1996-97) to MASTER IN COMPUTER APPLICATIONS (MCA)

(affiliated to Amravati University and recognised by AICTE)

The MCA programme in the jurisdiction of Amravati University is conducted at following centers.

Centre No. 1 - P.G Department of Computer Science & Engg Amravati University, Amravati-444602 (Maharashtra) (AICTE approval No 411/MS-02/APR(CS)/BOS/95 Dated 12.5 95)

Centre No. 2 - Department of Computer Science and Technology DCPE, H V P. Mandal, AMRAVATI 444605 (Maharashtra) (AICTE approval No. 411/ms-02/APR(CS)/BOS/95 Dated 11.9.95)

Duration of Course - 6 Semester
No. of seats - 30 at each centre

15% seats are reserved for students belonging to other state.

Eligibility:- Graduate in any discipline with 50% marks (45% for B.C. candidates) and having opted mathematics upto (10+2) level. (Students appearing at final Year of Degree Examination may also apply.)

Mode of selection - Score and rank in Entrance Test plus Personal Interview

Fees payable after selection - Rs 15,000/- annually.

Application forms and information brouchure will be available on request by payment of Rs. 250/- in cash/DD drawn in favour of **Registrar, Amravati University, Amravati.**

From,
i) Head of Centre No. 1 and
ii) Course Co-ordinator of Centre No.2

The request by post should be accompanied by self addressed envelope of 20 cmx25 cm with postage stamp of Rs 6/- affixed to it and marked **"MCA ENTRANCE"**. The Institution will not be responsible for postal delay/lapses.

Issue of application forms:- 27/05/96 (on wards) during office working hours.

Last date of Submission of Completed forms: 24/6/96 (upto 5 p.m)

Date of Common Entrance Test : 07/07/1996 (11 to 1 p.m.)

Venue of Entrance Test :- Amravati University, Amravati.

REGISTRAR

CLASSIFIED ADVERTISEMENTS

CHH. SHAHU CENTRAL INSTITUTE OF BUSINESS EDUCATION & RESEARCH,

UNIVERSITY ROAD, KOLHAPUR 416 004.

WANTED

Applications stating Full Name, Address, Age, Educational Qualification and experience are invited for following posts in the Post-Graduate Institutions at Kolhapur for M.Com., M.B.A., M.E.M., MCA and other Diploma Courses.

Sr. No.	Subject	No. of Posts	Reservation
1.	Adv. A/c. & Taxation	1 Professor	
2.	Financial Management	1 Professor	
		1 Lecturer	
3.	Costing	1 Lecturer (PT)	
4.	Personnel Management	1 Professor	1 SC (I)
		1 Lecturer	1 SC (I)
5.	Economics	2 Professor	1 SC (I)
		2 Lecturer	1 SC (I)
6.	Marketing & Production Mgt.	1 Professor	
		3 Reader	1 SC (I)
7.	Statistics & Q.T.	1 Professor	
		1 Reader	1 SC (I)
		2 Lecturer	1 SC (I) ST (I)
		1 CHB	
8.	English	1 Lecturer	1 SC (I)
9.	Environmental Management	1 Professor	
		1 Reader	
		1 Lecturer	1 SC (I)
		1 CHB	
10.	Computer Management	1 Professor	
		1 Reader	2 SC (I), 1 ST (I)
		1 Lecturer	1 VJ (A), 1 NT (B) 1 OBC, 4 Open - 1 Open for Mahila.
11.		1 Librarian	

NOTE :

- Roman figures in the brackets show the number of times the advertisement given.
- For the reserved posts if candidates from particular category are not available then other candidates will be appointed for six months only.
- SC/ST/VJ(A)/NT(B), OBC applicants are advised to send a copy of their application to the Special Cell of the Shivaji University, Kolhapur.
- SC/ST/VJ(A)/NT (B)/OBC candidates who are domiciled out of Maharashtra State. will be treated as open.
- In respect of Educational Qualifications the rules of UGC and Shivaji University will be followed. The candidates may write to undersigned for details.
- Pay Scales Service conditions will be as per rules of Shivaji University, Kolhapur.

Apply giving full particulars within a month from the date of publication of this advertisement to the undersigned.

Dr. A.D. SHINDE
DIRECTOR

ALIGARH MUSLIM UNIVERSITY

ALIGARH (U.P.)

Advertisement No. 2-A/96-97
Dated: May 15, 1996

Applications on the prescribed form are invited for the following posts by 30.06.1996.

Number and nature of the post may vary at the time of interview. The Selection Committee will be authorised to relax the prescribed qualifications if a highly qualified scholar is otherwise found suitable for the post. Higher initial start may be given to candidates possessing exceptional qualifications and experience.

A. FACULTY OF MEDICINE

1. **PROFESSOR OF SKIN & V.D. (Plan Post), Department of Dermatology.**
   Scale of Pay : Rs. 4500-7300 plus allowances
   Qualifications :
   M.D. (Dermatology & Venereology)/ M.D. (Medicine) with D.V.D., D.D.
   Teaching/Research Experience :
   As Reader in Venereology and Dermatology for 4 years in a Medical College.

2. **Lecturer in Neurosurgery, Department of Surgery**
   Scale of Pay : Rs. 2200-4000 plus allowances
   Qualifications :
   M.Ch. (Neurosurgery)
   Teaching/Research Experience:
   Requisite recognised postgraduate qualification in the subject

B. FACULTIES OF ARTS & SOCIAL SCIENCES

3. READER IN JOURNALISM (PLAN POST)
   Scale of pay : Rs. 3700-5700 plus allowances
   Qualifications:
   Good academic record with a Doctoral degree of equivalent published work in the appropriate branch.
   Evidence of being actively engaged in (i) research or (ii) innovation in teaching methods or (iii) production of teaching materials.
   About five years experience of teach-

ing and/or research provided that atleast three of these years were as Lecturer or in an equivalent position.

4. **Lecturer in Kannada** (with Comparative Studies in Urdu/ Hindi, Centre for Comparative Study of Indian Languages and Culture) (VIII - Plan Post).

5. **Lecturer in Economics** (Temporary), Department of Economics
   Scale of pay: Rs. 2200-4000 plus allowances
   Qualifications :
   I-Essential :
   Good Academic record with atleast 55% marks or an equivalent grade at Master Degree level in the relevant subject from an Indian University or an equivalent degree from a foreign University.
   Candidates besides fulfilling the above qualifications should have cleared the eligibility test for lecturers conducted by UGC, CSIR or similar test accredited by the UGC, provided that candidates who have submitted Ph.D thesis or passed the M.Phil. examination by 31st December, 1993 are exempted from the eligibility test for lecturers conducted by UGC, CSIR or similar test accredited by the UGC.
   I-Note: Relaxation from 55% to 50% may be given to the candidates who have cleared the eligibility test for lecturers conducted by UGC/CSIR, or a similar test accredited by the UGC or the JRF examination conducted by the UGC/CSIR only.
   II-Desirable: (FOR THE POST OF LECTURER IN KANNADA)
   1. M.A. in any other Indian Languages or sufficient knowledge of any other Indian language/languages.
   2. Knowledge of Hindi/Urdu
   3. Basic knowledge of Linguistics

C. FACULTY OF UNANI MEDICINE

6. **Lecturer in Tashreeh,** (Temporary) Department of Kulliyat

7. **Lecturers in Ilmul Advia,** Department of Ilmul Advia

8. **Lecturer in Jarahat,** Department of Jarahat
   Scale of Pay : Rs. 2200-4000 plus allowances
   Qualifications :
   i) Degree/Diploma in Unani Medicine from a University established by law or a Statutory Board/Faculty/Examining Body of Indian Medicine or equivalent and included in IInd Schedule of Indian Medicine Central Council Act, 1970.
   ii) Postgraduate qualifications in the discipline from the recognised Institution/University established by law.
   iii) Original published papers/books on the subject.

9. **Professor of Agricultural Microbiology,** Institute of Agriculture.
   Scale of Pay : 4500-7300 plus allowances
   Qualifications :
   An eminent scholar with published work of high quality actively engaged in research with ten years of experience in postgraduate teaching and/ or research at the University/ National level Institution, including experience of guiding research at doctoral level.

   OR

   An outstanding scholar with established reputation who had made significant contribution to knowledge.

10. **Principal, Women's College**
    Scale of Pay : Rs. 4500-7300 plus allowances
    Qualifications:-
    I-Essential :
    Candidates should possess Consistently Good Academic Record with high academic qualifications in Arts, Social Sciences or Science Ten years teaching experience out of which atleast five years should be as Reader
    Desirable :
    Administrative Experience.

NOTE: Preference will be given to women candidates.

11. **Principal, Ajmal Khan Tibbiya College**
    Scale of Pay : 4500-7300 plus allowances
    Qualifications:
    I-Essential:
    1. Degree/Diploma in Unani Medicine from a University established by law or a Statutory Board/Faculty/ Examining Body of Indian Medicine Central Council Act, 1970.
    2. Teaching experience in a recognised Institution for ten years in the respective discipline.
    3. Postgraduate qualifications in the discipline from the recognised Institution/University established by law.

    II-Desirable:
    1. Atleast 5 years Administrative experience
    2. Good knowledge of Arabic/Persian and English.
    3. Original published papers/books on the subject.

12. **Curator, Maulana Azad Library**
    Scale of pay : Rs. 3700-5700 plus allowances
    Qualifications :
    I-Essential:
    1. Master's Degree in Library Science or in Documentation.
    2. One year's specialisation in Archives and MSS keeping.
    3. 8 Year's experience as Assistant Librarian in a University/College or College Library/Institution of National Importance at equivalent level.

    OR

    1. B.Lib. Science
    2. M.A. in Arabic/Persian/Islamic Studies/Medieval History
    3. One Year's specialisation in Archives and MSS Keeping.
    4. 8 Year's experience as Assistant Librarian of a University Library/ College Library/Libraries of National Importance 4 years of which should be in the MSS division.

    II-Desirable
    Master's Degree in Library Science or Ph.D. in the area of Arabic/Persian/Islamic Studies/Medieval History

13. **PRINCIPAL, AMU CITY GIRLS HIGH SCHOOL**
    Scale of pay: Rs. 3000-4500 plus allowances
    Qualifications:
    I-Essential:
    1. Master's degree with atleast 55% marks.
    2. A Degree/Diploma in Teaching/ Education.
    3. At least 8 years educational experience : 5 years as teaching experience at Secondary level/higher level in a recognised Institution and 3 years experience in Educatinal Administration.

    OR

    Atleast 10 years teaching experience as Postgraduate Teacher in a recognised School.

II-Desirable:

1. Working knowledge of English, Urdu and Hindi
2. Experience and capability to organise co-curricular activities of the School.

NOTE: Preference will be given to women Candidates.

14. **Public Relations Officer**

Scale of pay : Rs. 2200-4000 plus allowances

Qualifications :

I-Essential:

- i) A postgraduate degree with atleast 55% marks or its equivalent grade.
- ii) Five years administrative experience as Assistant Public Relations Officer or in an equivalent post, in academic institution/government office/public undertaking.

II-Desirable:

- A) Proficiency in speaking and writing English, Urdu & Hindi.
- B) Persons having experience in Journalism/public relations work may be preferred.

NOTE: For the post at serial Nos. 3, 4, 6, 7, 8 & 10. Those who have applied earlier in response to advertisements No. 3-A/95-96, 4-A/95-96, 5-A/95-96 & 1-A/96-97 dated 1.12.1995, 15.1.1996, 15.2.1996 & 15.4.1996 respectively need not apply again. They will be considered on the basis of their previous applications if found eligible

Prescribed application forms with instructions may be had either:

- a) **Personally** from the Reception Counter, Administrative Block, AMU on production of Cash receipt for Rs. 25/- issued by the Cash Section, Finance Office, A.M.U., Aligarh, or
- b) **By post** from the Deputy Registrar (Selection Committees), Aligarh Muslim University, Aligarh- 202002, by sending a written request (mentioning the post, Advertisement number and date) with a self addressed stamped (Rs. 2/- envelope of 9x4" - size and a crossed IPO/DD for Rs. 25/- payable to the Finance Officer, Aligarh Muslim University, Aligarh - 202002. The cover should be superscribed on the top left with 'Request For Employment Form'.

Complete application form alongwith Cash receipt/IPO/DO for Rs. 125/- (non-refundable application fee) procured in the above manner may either be delivered personally or sent by post, superscribing on the top left of the cover the post applied for, advertisement number and date, to the Deputy Registrar (Selection Committees),, Aligarh Muslim University, Aligarh - 202002, so as to reach him by **30.06.1996.**

Dr. H.A.S. Jafri
REGISTRAR

ALPHONSA COLLEGE,
PALA-686574
KOTTAYAM, KERALA

WANTED

Applications are invited from candidates for the following posts of Jr. Lecturers (Pre-Degree Category), and Lecturers (U.G.C. Category) under open/community quota.

- Political Science - 2 each in U.G C. and P.D C. (permanent vacancies)
- Physical Education - 1. U.G.C. (Permanent vacancy)
- Librarian (I Grade) - 1. U.G C. Permanent vacancy)

Age: As prescribed by the Govt./Uty.

Qualifications· (i) U G.C. - Master's Degree in the concerned subject with at least 55% of marks and pass in National level eligibility test by the U.G.C./C.S.I R or similar test accredited by the U G.C (ii) P.D.C. - Master's Degree in the concerned subject with at least 50% of marks & B.Ed Degree.

Apply **within 30 days** from the date of this notification. Application form can be had from the college office on payment of Rs. 120/- (Rs. 130/- by post). Those with the prescribed qualifications who had applied in response to our earlier advertisement need not apply again.

PRINCIPAL.

Agricultural Development Trust's
SHARDABAI PAWAR MAHILA ARTS, COMMERCE & SCIENCE COLLEGE
SHARDANAGAR (MALEGAON BK.)
TAL: BARAMATI, DT-PUNE 413 115

WANTED PRINCIPAL

A full fledged girls college needs a principal from coming academic year (1st July, 96).

Qualification-Master degree with B+ grade (above 55%) in Arts/Commerce/Science and Minimum ten years teaching experience to degree classes and approved by the University.

Pay scale and service conditions as per UGC, Pune university and State Government rules and regulations.

Application with all necessary certificates and testimonials (attested true copies) should reach the Chairman, Agricultural Development Trust, Sharadanagar, Malegaon Bk. 413 115, Taluka: Baramati, Dist-Pune **within 15 days** after publication of this advertisement. Candidates in service should send their application through proper channel.

Dr. D.G. Alias Appasaheb Pawar
Chairman,
Agricultural Development Trust,
Baramati.

TECHNICAL TEACHERS' TRAINING INSTITUTE
SECTOR 26, CHANDIGARH
ADVERTISEMENT No. 44. May 1996.

Applications are invited by the Principal on prescribed form for the undermentioned posts

1. Prof. Computer Science (4500-7300) One Post (Regular)
   (Tentative emoluments Rs 11250/-)
2. Assistant Prof. Electrical Engg (3700-5700) : One Post (Regular)
   (Tentative emoluments Rs. 10170/-)
3. System Engineer (Computer Science) (3000-4500) : One Post (Purely Temporary against leave vacancy).

   (Tentative emoluments Rs. 8460/-)

Application form, qualifications, information brouchure can be had from the Senior Administrative Officer of the Institute personally or by sending a self-addressed unstamped envelope (28cms x 12cms) indicating the advertisement number and name of the post at the top of the envelope.

Applications complete in all respects should reach the Principal on or before 28.6.96. Applications received after the due date will not be entertained.

M.S. HOME SCIENCE COLLEGE

ANGAMALY SOUTH - 683 573
KERALA STATE

WANTED

Applications are invited for the post of:-

1. Lecturers (Lady) in Physics, Home Science, Zoology, Botany, English (Leave Vacancy) and Chemistry (OPEN & COMMUNITY QUOTA)
2. Ministerial Staff - Laboratory Assistant & Specimen Collector (OPEN & COMMUNITY QUOTA)

Age & Qualifications : As per Government, University and U.G.C. rules and regulations. Apply **within 30 days** of this notification in the prescribed form which can be had from the College office on payment of Rs. 100/- (Rs. 110/- by M.O.) for Lecturer. Rs. 20/- (Rs. 30/- by M.O.) for Ministerial Staff.

PRINCIPAL

KURIAKOSE ELIAS COLLEGE

MANNANAM P.O. KOTTAYAM - 686 561, KERALA

WANTED

1. Lecturer in Biochemistry (UGC Scheme - leave vacancy) Open quota.
2. Junior Lecturers (in both open and community quota) in English, Physics, Chemistry and Zoology. These posts are subject to sanction by University/ govt. **Age:** As prescribed by the government/university. **Qualification:** For the post 1- Master's degree in Biochemistry with not less than 55% of marks and a pass in the UGC eligibility test. For the post 2 - (i) Master's Degree in the concerned subject with at least 50% of marks (ii) B.Ed. degree. Those who are appointed as Junior Lecturers will not have any claim for U.G.C. scheme vacancies; will have to teach in the Pre-degree level only, will be paid only state pay scales. Apply **within one month** from the date of this notification. Application form and other details can be had from the college office on payment of Rs. 100/- (by post Rs. 110/-)

PRINCIPAL

Dnyan Prabodhini Mandal's
SHREE MALLIKARJUN COLLEGE OF ARTS & COMMERCE,
NAGARCEM,
CANACONA - GOA. (403 702)

SITUATIONS VACANT

Applications are invited from the Indian Citizens only for following posts:

1. Principal
2. Librarian

Qualifications & Experience:

1 **Principal:**

a) An approved teacher in a College or University, with contributions to educational innovations, design of new courses and curriculae.

b) Good academic record with Ph.D. degree or an equivalent published work and atleast 8 years of teaching experience at level of lecturer or above, in a college or University.

OR

Good academic record with M.Phil. degree and at least 10 years of teaching experience at level of lecturer, or above in a College or University.

Scale of pay: Rs. 3700-5700 plus allowances as prescribed by Goa Govt. or Goa University.

Note: Selected candidate having Ph.D. degree will be eligible for scale of Rs. 4500-7300 after five years regular service as Principal and candidate having M.Phil. degree will be eligible for this scale after 8 years service as Principal, subject to approval of Goa University and Goa Government.

2 **Librarian:**

Master's degree in Library Science or an equivalent professional degree with at least fifty five percent marks or equivalent or Masters degree in Arts, Science or Commerce of equivalent degree with at least fifty five percent marks or its equivalent grade with Bachelor's degree in Library Science or equivalent professional degree with at least fifty five percent marks or its equivalent grade plus consistently good academic record.

Scale of pay: Rs. 2200-75-2800-100-4000 plus allowances as per Goa University & Goa Govt. rules.

The service rules prescribed by the Goa University and Goa Govt. will be applicable for the posts.

Persons who are already employed shall send their applications through proper channel. Break in service should be accounted for. Interested candidates should apply giving full details of academic qualifications from S.S.C. onwards clearly indicating the subject offered, marks scored and class/division obtained at all public examinations, teaching experience, date of birth, etc.

True copies of statements of marks of all public examinations passed should be enclosed. Applications duly completed in all respects should reach to the Secretary **within 15 days** from the date of publication of the advertisement at the college address.

SECRETARY

BANASTHALI VIDYAPITH
(Deemed to be University)

Wanted: Readers 3 (1 SC/ST) Qualification Essential: M Tech. (Comp. Sc.) with valid GATE Score. Desirable Ph.D. *Specialization* Networks/Distributed Databases/Parallel Computing. Pay scale: 3700-125-4950-150-5700. Allowances as per Vidyapith rules. Workers must become habitual wearer of Khadi on appointment. Vidyapith reserves the right increase/reduce the posts or not to fill up the posts advertised. Biodata with a Postal order of Rs. 25/-, giving complete details about academic career experience etc. should be sent to the Secretary, Banasthali Vidyapith, P.O. Banasthali Vidyapith-304022 **within three weeks** of the advertisement. 4/96

INDIRA GANDHI INSTITUTE OF DEVELOPMENT RESEARCH
(IGIDR)

Indira Gandhi Institute of Development Research, Mumbai, an autonomous research institution financed by Reserve Bank of India, and a deemed university, invites applications for the position of Assistant Librarian, a second level position, in its growing, automated, interdisciplinary library catering to over 100 professionals.

Applicants should be below 35 years of age, have a master's degree in library science and at least 5 years of experience including handling of journals' subscription, classification of books, cataloguing with AACR II and subject indexing using a standard thesaurus, in a reputed institution, preferably in a social science library, 3 of which should be after obtaining the M.Lib. degree. Knowledge of DOS/UNIX operating system and library automation software is essential. Experience relaxable in the cases of candidates otherwise found suitable.

Institute will offer competitive remuneration, in the rank of a lecturer in the UGC pay scale, housing on campus and other benefits comparable to leading research institutions in the country.

Interested persons may send their CV to the Registrar, Indira Gandhi Institute of Development Research, Gen. Vaidya Marg, Goregaon (East), Mumbai 400 065 **within 30 days** of appearance of this advertisement. The Institute reserves the right to consider candidates who have not applied but whose candidature is recommended to the selection committee.

Agricultural Development Trust's

SHARDABAI PAWAR MAHILA ARTS, COMMERCE & SCIENCE COLLEGE,

SHARDANAGAR, MALEGAON (BK)
413 115, TAL: BARAMATI, DT. PUNE.

(Affiliated to University of Pune, Id. No.PU/PN/ACS/099/(1993)

WANTED

Senior College (Arts Granted), Commerce & Science (Non-Granted) Lecturers in the Following subjects for the year 1996-97.

FULL TIME POSTS

1)	Commerce	1 (SC)
2)	Hindi	1 (SC)
3)	History	1 (SC)
4)	Psychology	1 (Open)
5)	Chemistry	2(1 SC, 1 Open)
6)	Botany	2(1 SC, 1 Open)
7)	Microbiology	1(1 SC)

1. **Qualification**: a) Master Degree in the relevant subject atleast with 55% marks or its equivalent grade and good academic record. b) Th candidate must have also passed UGC's NET or State Govt. SET Examination.
2. Pay scales and service conditions will be as per Pune University and State Govt. rules.
3. Applicants who are employed are requested to send their applications through proper channel.
4. In case the qualified and suitable candidate from reserved categories are not available, application from other category candidates will be considered for one academic year only.
5. Backward class candidates are advised to send one copy of their application to the Deputy Registrar (Reservation Cell) University of Pune, Pune-7.
6. Prescribed application forms may be obtained personally from college office by paying Rs Ten in cash or by sending M.O. of Rs Fifteen to the Principal.
7. Application form duly completed in all respects, along with attested true copies of certificates and testimonials should reach the Principal on above address **within 15 days** from the publication of this advertisement.
8. Enclose one self-addressed envelope affixed with one rupee postage stamp along with application form.

PRINCIPAL

Dr. D.G. Alias Appasaheb Pawar
CHAIRMAN

ST. XAVIER'S COLLEGE FOR WOMEN,

ALUVA-683101.

WANTED

Women lecturer (both community and open merit) for the vacancy likely to arise in Hindi, subject to Government, University and UGC norms and regulations. At present, the appointment will be under TFS vacancy, with UGC qualifications, likely to become Pre-degree Category. Application form can be obtained from the College Office on payment of Rs. 100/- (Rs. 110/- by Post) Apply **within 30 days** of this notification.

MANAGER

MAR ATHANASIUS COLLEGE ASSOCIATION
KOTHAMANGALAM - 686 666
KERALA

WANTED

1) Lecturer in Economics - UGC Category.
2) Lecturer in Computer Science - UGC Category.
3) Junior Lecturers in English, Economics, Commerce and Chemistry in the Pree-Degree Category in the Mar Athanasius College, Kothamangalam.

Age as prescribed by the Govt. of Kerala.

Qualifications: For Lecturer, as per UGC and Mahatma Gandhi University norms. For Junior Lecturer, Masters Degree in the concerned Subject with atleast 50% of marks and B.Ed. Degree (as prescribed by the Govt. of Kerala)

Apply to the Secretary **within 30 days** from the date of publication of this notification. Application form and other details can be had from the office of the SECRETARY, MAR ATHANASIUS COLLEGE ASSOCIATION, KOTHAMANGALAM on payment of Rs. 100/- in person, or Rs. 110/- by DD payable at Kothamangalam Branch of any scheduled bank.

SECRETARY

VIDYA BHAWAN SOCIETY

UDAIPUR-313001

Applications invited till 28.6.96 on prescribed form available on payment of Rs. 30/- also through postal order or D.D. in the name of Organising Secretary for the following posts:

FOR VIDYA BHAWAN RURAL INSTITUTE - Lecturer in Mathematics, Computer Science and a Librarian. Qualifications and pay scales as per U.G.C. norms.

FOR VIDYA BHAWAN POLYTECHNIC - (a) Head of Department of Electronics (3000-4500 + DA), (b) Lecturer Electronics, Mathematics (2200-4000 + DA), (c) Technician Carpentary (975-1720+DA) Qualifications and pay scales as per Govt. norms.

Details about qualifications can be obtained with the application form.

ORGANIZING SECRETARY

GURUKULA KANGRI VISHWAVIDYALAYA, HARDWAR

(Deemed University)

ADMISSION NOTICE-SESSION 1996-97

Applications on prescribed form are invited from male candidates for admission to the following courses:-

1. Alankar-Vedalankar/Vidyalankar (B.A.) T.D.C.
2. Alankar Samanya-B.A. (T.D.C. General Course)
3. B.Sc. (Maths, Bio. Computer, Industrial Microbiology groups)
4. M.Sc. (Maths, Microbiology, Chemistry, Physics, Environmental Science and Psychology)
5. M.A. (Ved, Sanskrit, Philosophy, Hindi, English, Psychology. _______, Yoga, Ancient Indian History, Culture and Archaeology.
6. Ph-D. (Ved, Philosophy, Hindi, Sanskrit, English, Psychology, Maths, Ancient Indian History, Culture and Archaeology, Botany, Zoology, Microbiology, Physics, Chemistry and Yoga.
7. Diploma in Yoga One year
8. P.G. Diploma in Hindi Journalism (one year)
9. Proficiency in English one year
10. Diploma in Yojna Vidhan (Karamkand) one year
11. Sanskrit "Pravesh" and Sanskrit "Praveen" one year Diploma.

KANYA GURUKULA MAHAVIDYALAYA, DEHRADUN
(CONSTITUENT COLLEGE AND SECOND CAMPUS)

Female (Hostelers as well as day scholars) send their application form direct to the Principal, Kanya Gurukula Mahavidyalaya, 47 sevak Ashram Road, Dehradun for admission to the following courses.

1. Alankar-Vedalankar/Vidyalankar (B.A.) T.D.C. course
2. M.A. Hindi, English, Sanskrit.

KANYA GURUKULA MAHAVIDYALAYA, SATIKUND KANKHAL, HARDWAR
(CONSTITUENT COLLEGE)

Female candidates for regular admission to the following courses may send their application form to the Principal, Kanya Gurukula Mahavidyalaya, Satikund Kankhal, Hardwar-249408.

M.A (Sanskrit, Philosophy, Hindi, English, Psychology and Ancient Indian History Culture & Archaeology).
M.Sc. (Maths, Chemistry, Physics, Microbiology, Environmental Science and Psychology.

GENERAL INFORMATION

1. Scholarships to M.A. Ved, Sanskrit & Philosophy students.
2. Reservation to SC/ST candidates as per Govt. of India Rules.
3. Prescribed application form and prospectus may be obtained on cash payment of Rs. 50/- from the Registrar Gurukula Kangri Vishwavidyalaya, Hardwar, Principal Kanya Gurukula Mahavidyalaya-47 sevak Ashram Road Dehradun and Principal Kanya Gurukula Mahavidyalaya-Satikund Kankhal, Hardwar. If required by post it may be obtained by sending Bank draft of Rs 60/- payable to Registrar Gurukula Kangri Vishwavidyalaya, Hardwar.

Last date of receipt of filled in application form (regular students)

B.Sc., M.Sc. and Alankar-Samanya-B.A.	
Without late fee	10/07/96
With Rs. 200/- late fee	15/07/96
Alankar-Vedalankar/Vidyalankar	
M.A. and Diploma courses.	31/07/96
Ph-D.	31/07/96 and 31/12/96

Dr. Jaidev Vedalankar
REGISTRAR

UNIVERSITY NEWS, MONDAY, JUNE 3, 1996 Regd. No. R.N. 7180/63 Postal Regd. No. DL–11106/96

INDIRA GANDHI INSTITUTE OF PHYSICAL EDUCATION & SPORTS SCIENCES

(University of Delhi)
B-Block, Vikas Puri, New Delhi-110 018

ADMISSION NOTICE - 1996

Applications are invited for admission to:

(A) B.Sc. Physical Education, Health Education and Sports (P.E.H.E.S.) 3 Years Degree (Seats-70) Eligibility : 10+2 or equivalent Qualification

(B) Master of Physical Education & Sports (MPES) 2 Years (Seats-25) Eligibility : B.Sc. (P.E.H.E.S.)/ B.P.E./B.Sc./B.A./B.Com.)

(C) Post Graduate Diploma in Physical Education (P.G.D.P.Ed.) 1 Year (Seats-50) Eligibility : Graduation

UNIQUE CAREER OPPORTUNITIES

(After 10+2 Onwards)

Make use of India's best sports science laboratories and Highly qualified staff to accomplish your dream career through job oriented education to become :

- University / College / School Teacher.
- Sports Journalist, Sports Physiotherapist, Sports Manager.
- Specialist in Sports Coaching & selection.
- Qualified Health Club Practitioner.
- Physical Fitness Expert / Director.
- Stadia Manager / Administrator.
- Distinguished Sports Scientist.
- Supervisor / Counsellor / Sports Officer in various Govt., Semi Govt., and Pvt. Organisations such as Five Star Hotels, Railways, Air India, Tatas etc.

70% Teachers having Ph.D. degree
20% Teachers experienced abroad.

Last Date for submission of completed application form for :

(i) B.Sc. (Physical Education, Health Education and Sports) is June 18th, 1996.

(ii) Post Graduate diploma in Physical Education and Master of Physical Education & Sports is July 4th, 1996.

For more details, the prospectus along with application form can be collected from Office of the Institute from June 5, 1996 on all working days on cash payment of Rs. 40/- or by post by sending a Bank Draft for Rs. 50/ in favour of the Principal, IGIPESS payable at New Delhi along with your complete postal address.

Adv. No. Adm. 96-97 / 1

DR. D.K. KANSAL (PRINCIPAL)

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